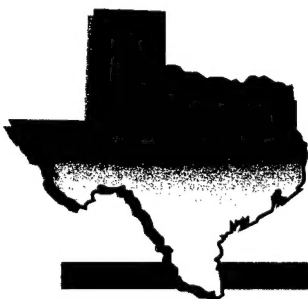
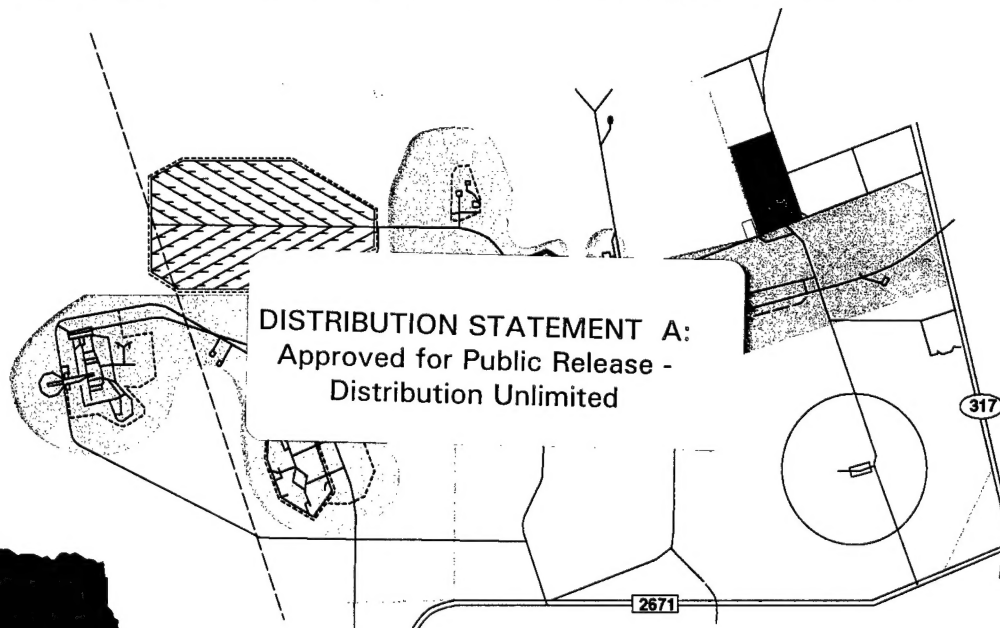
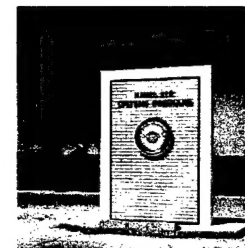
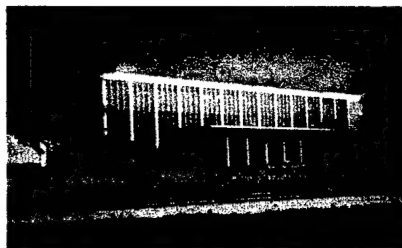


Environmental Assessment

Disposal or Retention of the Naval Weapons Industrial Reserve Plant (NWIRP) McGregor, Texas

Department of the Navy

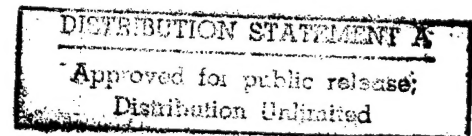


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Environmental Assessment

***Disposal or Retention of the Naval
Weapons Industrial Reserve Plant
(NWIRP)
McGregor, Texas***

Department of the Navy



November 1998

**ENVIRONMENTAL ASSESSMENT
FOR THE DISPOSAL OR RETENTION OF THE
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
McGREGOR, TEXAS**

1) Responsible Agency:

Department of the Navy

2) Title:

Disposal or retention of the Naval Weapons Industrial Reserve Plant (NWIRP)
McGregor, Texas.

3) Additional Information:

The following may be contacted for additional information concerning this document
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4) Type of Report:

Environmental Assessment (EA)

5) Abstract:

In 1995, Hercules Incorporated/Alliant Techsystems informed the Department of the Navy that the company intended to relocate its McGregor operations to West Virginia. The Naval Air Systems Command determined that when the contractor relocated its operations, the Command will no longer have a requirement to retain NWIRP McGregor. The contractor has now vacated the facility, and the plant has been placed in interim caretaker status until a decision on disposal or retention of the property is reached. The purpose of this EA is to assist the Secretary of the Navy in a series of interrelated decisions concerning the disposal or retention of the NWIRP McGregor property.

SUMMARY

1.0 TYPE OF REPORT

This report is an Environmental Assessment (EA).

2.0 NAME OF ACTION

The action is the disposal or retention of the Naval Weapons Industrial Plant (NWIRP) McGregor, Texas.

3.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The Department of Defense (DOD) is in the process of consolidating and reducing defense spending based upon statute and various Congressional acts. This has resulted in the closure of various military installations throughout the country, including government-owned, contractor-operated facilities such as NWIRP McGregor. As a result, Hercules, Inc./Alliant Techsystems, the government contractor at NWIRP McGregor, undertook its own evaluation of its business and determined that its operations should be consolidated at the Allegheny Ballistics Laboratory in West Virginia. The Naval Air Systems Command (NAVAIRSYSCOM) has re-evaluated the need to retain the land and buildings at NWIRP McGregor, a weapons industrial plant, and has determined that there was no need for the Navy to retain this facility for ordnance production once the contractor vacated the facility. Hercules, Inc./Alliant Techsystems has now vacated the facility, and the plant has been placed in interim caretaker status until a decision on disposal or retention of the property is reached. The purpose of this EA is to assist the Secretary of the Navy in a series of interrelated decisions concerning the disposal or retention of the NWIRP McGregor property.

4.0 DESCRIPTION OF PROPOSED ACTION

The disposal or retention of NWIRP McGregor, approximately 9,770 acres (ac) (3,954 hectares [ha]) of Federal property containing over 850,000 square feet (79,000 square meters [sm]) of facilities, is the Federal action evaluated in this EA. Should it be determined to retain the property, retention would consist of placing the property into long-term caretaker status. The property would not be put to further use, but would remain in a preserved state limited to security, maintenance, environmental restoration activities, and continuation of agricultural leasing activities. Should it be determined to dispose of the property (the proposed action), the action would include the consideration of whether the property would be disposed of consistent with the National Defense Authorization Act for Fiscal Year 1996 or assigned to the General Services Administration (GSA) for disposal in accordance with the screening requirements of the Federal Property Management Regulations (FPMR).

Under the first disposal option, the Secretary of the Navy is authorized to convey the property directly to the City of McGregor, Texas without consideration of the standard disposal procedures implemented in FPMR. The conveyance is subject to the condition that the City, directly or through an agreement with a public or private entity, use the conveyed property (or offer the conveyed property for use) for economic redevelopment to replace all or a part of the economic activity being lost as a result of the action. Should it be decided not to convey either the total property or any part of the property to the City of McGregor, that property would be assigned to GSA for ultimate disposal (the second disposal option). Upon designation for disposal by GSA, the property would be subjected to specific procedures designated to identify potential subsequent users. This is called the screening process. GSA would act as the disposal agency in performing the process of property disposal consistent with methods implemented in the Federal Property and Administrative Act of 1944.

5.0 NAVY ALTERNATIVES

The National Environmental Policy Act (NEPA) requires Navy to evaluate a reasonable range of alternatives for disposal of this Federal property. The No Action Alternative consists of retention of the property by the Navy in caretaker status. The Disposal Alternative (the proposed alternative) includes the consideration of whether to dispose of the property consistent with the National Defense Authorization Act for Fiscal Year 1996 or assign the property to GSA for disposal in accordance with the screening requirements of FPMR. For the purposes of NEPA analysis, direct environmental consequences or impacts are those associated with the No Action Alternative and either Navy's or GSA's disposal of the property. Indirect impacts are associated with the actions taken by others for the reuse of the property after disposal. The specific reuse of the facilities after ownership is transferred would be beyond the direct control of either the Navy or GSA. The City of McGregor has assisted in the development of a number of conceptual reuse scenarios (item 6.0 of this Summary) that are reasonably foreseeable for future reuse of the property for analysis of indirect impacts.

Presently, NWIRP McGregor contains approximately 9,770 ac (3,954 ha) of land, with the major portion of the non-industrial areas leased for agriculture use. This use includes cattle grazing and production of grain crops. All industrial operations by the contractor (Hercules, Inc./Alliant Techsystems) ceased July 31, 1996 and the contractor vacated the facility. Most of NWIRP McGregor, excluding the areas leased for agriculture use, has been placed in caretaker status until a decision is reached on disposal or retention of the property. On February 1, 1998, a caretaker maintenance staff consisting of one full-time person and two part-time persons remained on-site. The full-time person is the facility gate operator and also does weekly inspections on-site. One of the part-time staff operates the water utility and the other handles gate operations one day a week. All buildings at the site except for Buildings 300, 506, 510, and 1610 have been preserved. These buildings are being used by the caretaker staff, the Navy's contamination investigators, and the Navy's ordnance decontamination team as office

space. Approximately 20 persons can be on-site as part of these continuing operations. Utility usage has been reduced to minimal levels.

5.1 No Action Alternative

The No Action alternative would result in the U.S. government retaining ownership of the Navy-owned properties after closure. The properties would not be put to further use but would be preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety), except for the continuation of agricultural leasing activities. A full-time caretaker/maintenance staff would be established to ensure base resource protection, grounds maintenance, existing utilities operations, as necessary, and building care are accomplished. No other military activities/missions would be performed on the property.

Site investigations and remedial action would continue at NWIRP McGregor until the property is remediated and corrective action is complete. The formal Resource Conservation and Recovery Act (RCRA) closure procedure for the RCRA permitted units at NWIRP McGregor, including the development and implementation of a RCRA Closure Plan, is required for each permitted storage, treatment or disposal unit. Although closure and remediation of the RCRA-regulated units would be conducted under RCRA, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process, through the Navy's Installation Restoration Program (IRP), would proceed concurrently to address non-RCRA sites (identified by the Environmental Baseline Survey [EBS] process).

5.2 Disposal Alternative

As discussed above, two options are available to the Navy for disposal of the property (the proposed alternative). The National Defense Authorization Act for Fiscal Year 1996 authorizes the conveyance of all right, title, and interest of the NWIRP McGregor facility to the City of McGregor, Texas. Under this act, the Secretary of the Navy is authorized to convey the property without consideration of the standard disposal procedures implemented in the existing FPMR. This process would result in the direct transfer of approximately 9,770 ac (3,954 ha) of Federal property, including approximately 240 buildings, to the City of McGregor for economic redevelopment. Should it be decided not to convey either the total property or any part of the property to the City of McGregor, that property would be assigned to GSA for disposal consistent with the standard disposal procedures implemented in FPMR.

For this alternative, the site investigations and remedial action would also continue at NWIRP McGregor until the property is remediated and corrective action is complete. This would consist of the formal RCRA closure procedure for the RCRA permitted units and the CERCLA process to address non-RCRA sites identified by the EBS process. In the state of Texas, property identified and receiving closure concurrence of the Texas Natural Resource Conservation Commission (TNRCC) is transferable under the CERCLA 120(h)(4) process.

Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process. The timing of the remediation effort is dependent on the extent of the remediation efforts required and available funding. The Navy would coordinate with the future owner and/or operator of the installation and would perform all required remediation prior to facility transfer and reuse.

6.0 REUSE SCENARIOS

Relative to the first Navy disposal option and in accordance with Section 2868 of the National Defense Authorization Act for Fiscal Year 1996, the City of McGregor has chosen to act as the single local authority to receive NWIRP McGregor. As part of this effort, the City has developed a framework of conceptual reuses for NWIRP McGregor. The reuses under consideration were developed to meet specific key community goals for redevelopment. These goals included: maximum net economic return to local government; maintaining the economic health of the surrounding area; and, enhancement of the quality of human life and environment.

Since the specific reuse of the facility would be beyond the direct control of either the Navy or GSA, the EA analyses a range of generic reuses to represent the most likely or probable intensity levels of land use that could occur after disposal. The generic reuse levels (high intensity, medium intensity, and low intensity reuse) the Navy developed for consideration were formulated by evaluating the City's conceptual reuses, existing site land use conditions, adjacent land use, and market trends of the area. These generic levels would be typical for either of the two disposal options considered and would be used to determine the indirect impacts of the Federal action.

6.1 Reuse Scenario I - High Intensity

This reuse scenario, the City of McGregor's preferred reuse scenario, assumes a high intensity use of the existing facilities (approximately 809,800 square feet [75,200 sm]) with the reuse being mainly a mixture of industrial and commercial activities. The typical example for the McGregor area would include administrative offices, warehousing, light to heavy industry, and commercial potentially developed in a piecemeal fashion. Modifications can be anticipated to some of the buildings and infrastructure depending on the specific usage. The existing water wells would be used by the City for municipal water supply. Land used for agriculture would be held in reserve or continue to be used for agriculture pending identification of future uses. Public parks and open spaces may also be developed.

6.2 Reuse Scenario II - Medium Intensity

This reuse scenario assumes medium intensity usage for the facility, which can utilize most of

the existing structures (approximately 809,800 square feet [75,200 sm]), with the typical example being educational reuse of the site (Community College/Research and Development [R&D]). Classroom, athletic, recreational, administrative, and support facilities for a community college would be located in the eastern portion of the site. Modifications can be anticipated to some of the buildings and infrastructure depending on the specific usage. Agriculture oriented research and development facilities, experimental farmland, and storage would be located in the western and other portions of the site. Existing water wells would be used by the City for municipal water supply.

6.3 Reuse Scenario III - Low Intensity

This reuse scenario assumes low intensity usage with the typical example being agriculture/commercial use of the existing non-industrial areas (approximately 9,685 ac [3,920 ha]) of the site. Most of the industrial areas and facilities located at the site may not be needed and would remain in caretaker status. However, some of the industrial areas can be used as administrative and office resources, maintenance activities, agricultural processing, agriculture shop use (depending on adaptability from existing machine shop), and storage/warehousing. Minimal modifications to structures should occur. Existing water wells would be used by the City for municipal water supply.

7.0 SUMMARY OF ENVIRONMENTAL IMPACT

The EA evaluates the potential environmental consequences (impacts) associated with disposal or retention of NWIRP McGregor and with the reasonably foreseeable reuse of the property if disposal is selected. Navy analyzed the potential impacts of the No-Action and Disposal alternatives and Reuse Scenarios for their effects on facilities, earth resources, air resources, noise, water resources, hazardous materials and wastes, historical and archeological resources, biological systems, threatened and endangered species, socioeconomic resources (including economic activity), transportation, and public service facilities. For the purposes of NEPA analysis, direct environmental consequences or impacts are those associated with the No Action Alternative and either Navy's or GSA's disposal of the property. Indirect impacts are associated with the actions taken by others for the reuse of the property after disposal since the specific reuse of the facilities after ownership is transferred would be beyond the direct control of either the Navy or GSA.

7.1 No Action Alternative

The environmental impacts of the No Action Alternative would result in minimal direct impacts to either physical or biological resources of the region. The No Action Alternative would result in the majority of the buildings located on the property not being put to further use but being preserved to limit deterioration and ensure public safety. A full-time caretaker/maintenance staff would be established to ensure facility resource protection, grounds

maintenance, utilities operations, as necessary, and building care are accomplished. Maintenance on facility roads would be limited to ensure access only. Many of the water and sanitary lines would be disconnected or drained to preserve their condition. Agricultural leasing of the non-industrial areas of the property could be anticipated to continue as part of the caretaker operations.

Utility use on the property would remain at minimal levels with water use averaging less than 5,200 gallons per day (gpd) (19,684 liters per day), or 1.9 million gallons per year (7.2 million liters per year). Projected water use is based upon current caretaker staff activities and assuming continuation of existing agricultural water needs of the lessees. Water supplied to the lessees would be approximately 100,000 gallons (378,530 liters) during an average month and approximately 250,000 gallons (946,325 liters) per month during the summer. The total pumpage would be approximately 110.1 million gallons per year (416.8 million liters per year) less than during calendar year 1994. This would extend available groundwater supplies in the area well passed the current anticipated projection of year 2020. Wastewater production would be less than 200 gpd (760 liters/day) for the caretaker staff. Electricity use, natural gas use, and solid waste production would be negligible relative to the service area. It is anticipated that these reductions would have a long-term positive impact on area utility supplies, especially for area water supplies. However, long-term adverse impacts to the facility's infrastructure and utility systems could occur from caretaker status. Decreased building maintenance levels and lack of use of the utility systems could lead to their deterioration, making them unsuitable for possible later use. This is particularly true of the water system.

No new impacts to geology, soils or topography would be expected due to the limited grounds maintenance and continuation of agricultural activities since these activities are consistent with past activities. Agricultural lessees' would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 and all additional conservation and erosion control requirements contained in the agricultural leases. Thus, soil erosion potential would not change by placing the facility into caretaker status. Soils located in all areas would benefit over the long-term from the reduction or elimination of possible contaminant spills and from the on-going remedial actions that removes contaminants from soils and shallow groundwater.

Impacts to air quality and noise receptors from caretaker activities of the property would be non-detectable. All air emission and noise emission sources existing prior to the cease of industrial operations at the facility, except those associated with caretaker maintenance and continued agricultural use, would be eliminated. As a result, a beneficial impact on ambient air quality, although classified as in attainment for all criteria, would be realized. Overall noise sources would be intermittent and of generally lower intensity during caretaker status than the industrial noise which occurred during pre-closure operations. During previous rocket motor testing high intensity noise of short duration generally ranged between 145 dB to 180 dB in the area of testing. Rocket testing would not occur as part of caretaker activities. Noise levels in

proximity to general caretaker/agricultural activities can range from approximately 50 dB to 80 dB, depending on separation distance, consistent with past maintenance and agricultural activities at NWIRP McGregor.

Impacts to surface water/groundwater resources related to caretaker activities under the No Action Alternative would be minimal. Most water release sources (spills, for example) or stormwater runoff impurities, except those associated with caretaker maintenance and continued agricultural lease activities, would be eliminated. This would result in improved stormwater runoff quality entering surface water features. Application of pesticides by the caretaker staff used in preventive and regular facility maintenance and grounds maintenance would be in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and state regulations. Agricultural lessees' would also continue to be required to comply with existing contractual provisions concerning applications of pesticides and herbicides. All applications would be accomplished in compliance with DOD requirements for safety, effectiveness and environmental protection. The 100-year floodplains located within the facility would continue to not be affected.

Under caretaker status, hazardous materials would be used in preventive and regular facility maintenance activities and grounds maintenance. The caretaker staff be responsible for hazardous materials handling training, as well as hazardous materials communication requirements of OSHA regulations. The application of pesticides by the caretaker staff and agricultural lessees' would continue as discussed above. Eventual remediation of hazardous materials such as asbestos, lead-based paint, PCB-containing materials, and radon would be performed. This alternative would not affect the handling of existing sites identified for cleanup. These sites are currently being fully evaluated and remedial actions would be taken, as necessary. Long-term positive impacts would occur since all hazardous materials and hazardous substance use related to past (pre-closure) industrial operations would be eliminated.

Buildings 105, 106, 300, 601, 602, 603, 711, 712, 1201, 1237, 2301, 2308, and 2309, along with parts of the High Explosive Magazine Area (Buildings 8001 through 8064) at NWIRP McGregor have been identified as eligible for the National Register of Historic Places (NRHP). Additionally, an archeological reconnaissance survey identified one prehistoric component and 13 historic components as being potentially eligible for listing on the NRHP. As part of interim caretaker status, all buildings considered eligible for NRHP, except Building 300, have been preserved as part of the interim caretaker status. Building 300 is currently being used by the gate operator and as office space for the Navy's contamination investigators. This use may continue under long-term caretaker status, however, this would not adversely impact the building's eligibility since these activities are consistent with previous uses. Thus, implementation of the No Action Alternative would result in minimal potential impacts to historic buildings onsite. Past activities in the area of the eligible archeological resources have been mostly agricultural. Under the No Action Alternative, these activities could be anticipated to be continued with no new activities being implemented in the areas not previously disturbed

by pre-closure agricultural activities. Since this a continuation of previous activities onsite, minimal new impacts to archeological resources would occur.

The No Action Alternative would result in little to no new impact to vegetation resources in the industrial areas of NWIRP McGregor and impacts to vegetation in the non-industrial areas leased for agricultural use would be consistent with past activities. Some caretaker maintenance activities would continue around certain structures and facilities to control vegetation for fire prevention, health, and safety reasons. These activities would include occasional mowing and cutting of vegetation. Agricultural lessees' would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 and all additional conservation and erosion control requirements contained in the agricultural leases. Agricultural lessees' would also continue to maintain all grassed waterways, terraces, ditches and other structural conservation practices to the original construction specification as provided by the Soil Conservation Service. These caretaker maintenance/agricultural activities are expected to result in little to no permanent impact to vegetation resources.

The No Action Alternative would result in a possible increase in site utilization by various wildlife species since only caretaker maintenance activities and continued agricultural use would occur. Lack of human activity and operations would encourage wildlife utilization in areas not previously used and/or in areas that were used to a minimal extent by wildlife. The potential for occurrence of any of the listed threatened and endangered species for the area as year round residents at NWIRP McGregor is unlikely due primarily to the absence of preferred habitat, continuation of on-going agricultural activities, and caretaker maintenance activities. There would be no impact to threatened or endangered flora and fauna as a result of the implementation of the No Action Alternative. The placement of NWIRP McGregor into caretaker status would also not result in any impact to sensitive habitat. It is anticipated that habitat diversity would increase due to the over-all limited maintenance activities on the property. This would result in positive impact overall to the habitat interrelationships through the occurrence of natural succession which would yield an increase in riparian habitat and other habitat areas.

While placing the facility into long-term caretaker status would result in only minor potential impacts to physical and biological resources, it would result in the loss of what could be a valuable community resource for redevelopment and result in potential loss of economic opportunities to the local community. Placing the property into caretaker status would not be an enhancement to the growth of the local area. Impacts would consist of a potential decrease in population, loss of economic activity for the area, and possible reduced employment from pre-closure conditions. Based upon currently available workforce and employment numbers, which reflect the departure of Hercules, Inc./Alliant Techsystems from the area, impacts to over-all workforce and employment have initially been minimal. The capacity of the community infrastructure, including roads, potable water and sanitary sewer service is

projected to continue to operate at acceptable levels of service. Community services such as police, fire, emergency medical services and schools would not be adversely impacted.

Implementation of the No Action Alternative is not expected to cause adverse environmental or economic (Environmental Justice) impacts specific to any group or individual from minority or low-income populations and children residing in the study area, in accordance with the requirements of Executive Orders 12898 and 13045.

7.2 Disposal Alternative

Disposal, as a transfer of title, in and of itself is not an environmentally disruptive action and would not directly impact physical, biological, or socioeconomic resources because no major change to the various resources would occur as part of the disposal process. However, the transfer of surplus DOD property with hazardous materials/hazardous waste issues is an involved process. One of the first steps for property transfer is a review of currently available information and the preparation of an EBS. A second step is the preparation of a Finding of Suitability to Transfer (FOST). The purpose of the FOST is to report the environmental suitability of a parcel for transfer to nonfederal agencies or to the public. Various initial site investigations have been conducted at NWIRP McGregor and implementation of additional investigations are in process to fully assess the various environmental concerns. Site investigations and remedial action would continue at NWIRP McGregor until the property is remediated and corrective action is complete. As previously discussed, this would consist of the formal RCRA closure procedure for the RCRA permitted units and the CERCLA process to address non-RCRA sites identified by the EBS process. In the state of Texas, property identified and receiving closure concurrence of the TNRCC is transferable under the CERCLA 120(h)(4) process. Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process.

Because the action of disposal would result in the transfer of potential eligible historic properties to other entities, Historic American Buildings Survey Level III (HABS Level III) documentation for each property type has been completed and submitted to the State Historic Preservation Office (SHPO). This documentation creates a permanent record of the buildings and structures that played important roles in the successful operation of NWIRP McGregor. The documentation also mitigates for the possible impacts from potential alternations to or demolition of eligible properties that could result as part of the potential reuse scenarios. The HABS Level III documentation has been accepted by the SHPO as completion of the Section 106 process. The Navy would also transfer NWIRP McGregor with a protective covenant that includes adequate conditions to ensure the preservation of the property's significant archeological features. The Navy would incorporate the protective covenants for both historic

and archeological resources into a Memorandum of Agreement (MOA) which would be completed prior to any permanent transfer of the property at NWIRP McGregor.

Absent statutory authority, Navy cannot impose other restrictions on the future use of this surplus Federal property. Navy would, however, include appropriate notifications in the deeds for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.). The EA addresses the actions that would be necessary to mitigate the impacts associated with reuse and redevelopment of the NWIRP McGregor property. If necessary, the acquiring entity, under the direction of Federal, state, and local agencies with regulatory authority over protected resources, would be responsible for implementing necessary mitigation measures if impacts are projected to occur.

Implementation of the Disposal Alternative is not expected to cause adverse environmental or economic (Environmental Justice) impacts specific to any group or individual from minority or low-income populations and children residing in the study area, in accordance with the requirements of Executive Orders 12898 and 13045.

7.3 Reuse Scenarios

These reuse scenarios identified represent uses which are considered less than the operational levels which existed under pre-closure conditions by one operator. However, the potential reuse of the property by one operator performing industrial and heavy manufacturing is no longer reasonably foreseeable for the future use of the property. Operation of NWIRP McGregor prior to closure was considered very high intensity use for the area due to the nature of the industrial operations. This usage would be expected to exert a greater impact to the physical and biological communities than any lesser intensive reuse scenario. Consequently, the projected physical and biological impacts anticipated due to the implementation of the City's preferred reuse (Reuse Scenario I - High Intensity), as well as Reuse Scenarios II and III, are not generally expected to be as great as impacts previously experienced during past (pre-closure) operations at NWIRP McGregor.

A maximum of 240 buildings, containing over 850,000 square feet (79,000 sm) of facilities, can potentially be reused by the acquiring entity for any reuse scenario. It is anticipated that for high and medium intensity reuse most of the existing structures (approximately 809,800 square feet [75,200 sm]) can be utilized. For low intensity reuse, mostly the existing non-industrial areas (9,685 ac [3,920 ha]) are anticipated to be used with a minimal number of the onsite structures. Utility use would vary with the highest use being for the high intensity reuse scenario and the lowest use being for the low intensity reuse scenario. Total water pumpage would be 78.6 million gallons per year (297.5 million liters per year), 33 million gallons (125 million liters) less than during 1994, for the high intensity usage; 50.2 million gallons per year (190.0 million liters per year), 62 million gallons (235 million liters) less than during 1994, for the medium intensity usage; and 22.4 million gallons per year (84.8 million liters per year), 90

million gallons (341 million liters) less than during 1994, for low intensity usage. This usage would provide water supply well passed the current anticipated projection of year 2020. However, it can be anticipated that the City of McGregor would utilize the available pumping capacity to meet its current water demands and reduce the amount of water being purchased from Lake Belton.

Wastewater production would continue at a maximum of 70,000 to 75,000 gpd (265,000 to 284,000 liters per day) to the City of McGregor's Sewer Plant for the high intensity and medium intensity usage. Low intensity wastewater production would be about 5,000 gpd (19,000 liters per day). Electric usage would average 85,084 KWH/day and natural gas usage would average 519 MCF/day (15 million m³/day) for the high intensity and medium intensity usage, consistent with pre-closure usage. Electricity use would be as low as 12,800 KWH/day and natural gas use would be minimal for the low intensity usage. Non-hazardous solid waste would average approximately two tons per day (1.8 metric tons per day) for the high intensity and medium intensity usage and would be minimal for low intensity usage. Because most of the internal communication equipment and wiring has been removed from the majority of the buildings, new communication systems would be required as part of any of the reuse scenarios. It is anticipated that metering of the various utilities would be required at each structure used to allow for proper billings.

It is anticipated that the existing rail lines would require rehabilitation along with new trackage as part of the high intensity usage. As much as 20 miles (mi) (32 kilometers [km]) of new trackage can be anticipated to be required to restore the original rail-lines. Major rail line rehabilitation is not anticipated as part of either the medium or low intensity usage. The existing improved roadways would be capable of handling the volume of loads typical of any of the reuse scenarios.

Topography at NWIRP McGregor is mostly level to gently rolling and no impacts are anticipated for any of the reuse scenarios considered. Construction in low-lying areas along creeks would be prevented since these areas are within existing 100-year floodplains which would be regulated by existing City ordinance, Flood Damage Prevention, once they have been disposed of. Application for a Development Permit must be submitted to the City's Floodplain Administrator for review and approval prior to any anticipated construction in identified floodplains. Any construction activities at the site for any of the reuse scenarios may temporarily increase soil erosion. Construction activities which affect more than five ac (two ha) would require the acquiring entity to obtain a National Pollutant Discharge Elimination System (NPDES) permit. Erosion problems would be minimized by implementing a Storm Water Pollution Prevention Plan (PPP) consistent with the NPDES permit requirements for construction activities. For the low intensity reuse scenario, agricultural activities may increase in intensity relative to those established during previous operations. It is anticipated that the agricultural activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well as those which may be implemented by the acquiring

entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Thus, soil erosion potential should not change in the non-industrial areas as a result of these activities.

For the typical mixed use and community college/R&D examples identified, most of the facilities and undeveloped land have the potential to be reused. Planned reuse scenario operations, construction of new facilities and renovation of existing facilities have the potential to affect local air quality. Construction activities would affect short-term air quality by causing fugitive dust emissions and contributing to vehicle, heavy equipment, and mobile power generator exhaust emissions. Modern methods of emission control and dust emission prevention would help mitigate construction-related air pollution. Dust generated by construction can also be controlled by watering of work areas. Construction machinery exhaust emissions would have negligible effect on the ambient air quality. Little or no new construction or renovation would take place for the low intensity reuse scenario.

Future stationary sources of air pollution due to the reuse of NWIRP McGregor under the high intensity reuse scenario would be of two general types: those resulting from fuel combustion and those resulting from industrial processes. Since the expected operations by the acquiring entity may be similar to those which occurred during pre-closure conditions, it is anticipated that the air emissions would also be similar. In general, the emissions from these sources would be minor and permits would be required for the acquiring entity and/or its tenants to comply with state regulations governing stationary source emissions. Implementation of the typical community college/R&D example identified would potentially decrease the number of air emission sources and the volume of pollutants discharged. In general, the emissions from these sources would be minor and permits may also be required for the acquiring entity and/or its tenants to comply with state regulations governing stationary source emissions. Impacts to air quality from continued agricultural activities on the property, although expected to possibly increase as part of the low intensity reuse scenario, would be non-detectable. For these reasons, an increased impact to air resources from future stationary sources associated with any of the reuse scenarios is not anticipated. All priority pollutants are expected to stay in attainment with Federal and state standards.

Noise levels at a given receptor location due to the proposed construction activities as part of the high and medium intensity reuse scenarios would vary widely, depending on the phase of construction, demolition, land clearing and excavations. To minimize the potential impacts of construction noise to the surrounding area, the acquiring entity and/or its tenants should limit the erection, demolition, alteration, or repair of any building, or the excavation associated with construction to daylight hours when occasional loud noises are more tolerable, consistent with City of McGregor Code ("Noise", Chapter 11, Article 2). Operational noise levels from the various activities at the converted NWIRP McGregor are anticipated to be similar to or less than those experienced under pre-closure conditions for high intensity reuse, and less than pre-closure conditions for medium and low intensity reuse. For general activities this would range

from approximately 50 dB to 80 dB, depending on separation distance. If rocket motor testing were to continue as part of the high intensity reuse, impulsive noise that measures 145 dB at 800 feet (244 meters [m]) could be expected. Pre-closure conditions, including rocket motor testing, consisted of no noise complaints being made with respect to NWIRP McGregor operations. The final user(s) of the facility would be responsible for implementing appropriate noise abatement for planned operations. Ambient operational noise levels would be similar to or less than what occurred during Hercules Inc./Alliant Techsystems plant production and nearby receptors would not be expected to be impacted.

During operations, impacts to water resources (surface water and groundwater) may occur through runoff from impervious surfaces such as buildings, parking lots and cleared areas for any of the reuse scenarios. Best management practices should be implemented by the acquiring entity to minimize these impacts. Impacts to surface water and groundwater during operations would possibly be equivalent or less for the high intensity reuse than those caused by the pre-closure operations at NWIRP McGregor. Impacts from the medium and low intensity reuse would be less. It is anticipated that the acquiring entity would obtain the required NPDES permits to operate the reuse scenarios consistent with the various regulations. Thus, it is expected that no untreated sanitary or process waters would be discharged directly to surface or groundwater. Any process wastewaters may require pre-treatment prior to discharge to the local wastewater treatment plant. Therefore, water resources would not be expected to be impacted as a result of operations that would occur as part of the typical reuse scenarios identified.

For the typical mixed use example identified, the quantity of hazardous substances estimated to be required for operations would be expected to be somewhat equivalent to what was used when NWIRP McGregor was in full production, although the nature of the hazardous substances present may change. The future owner(s)/operator(s) would be responsible for the management of hazardous materials and wastes used, handled, recycled or disposed of from the site. The appropriate waste handling, storage and disposal permits must be obtained from the EPA and TNRCC prior to facility operation. Individuals responsible for facility operation must use, handle, transport and dispose of these materials according to Department of Transportation (DOT), Toxic Substances Control Act (TSCA), Occupational Safety and Health Act (OSHA), EPA regulations, and TNRCC rules and regulations. Overall, on-site activities for the typical community college/R&D example identified would generate a decreased amount of hazardous waste compared to pre-closure conditions. The future owner(s)/operator(s) would also be responsible for the management of hazardous materials and wastes used, handled, recycled or disposed of from the site according to DOT, TSCA, OSHA, EPA regulations, and TNRCC rules and regulations. For the typical commercial agriculture example identified, an overall decreased amount of hazardous waste can be expected compared to pre-closure conditions. Pesticides and herbicides can be expected to be used in quantities similar to or greater than formerly present during the operation of NWIRP McGregor. These substances are anticipated to be administered in compliance with the appropriate state and Federal regulations, including FIFRA.

As indicated for the Disposal Alternative, HABS Level III documentation for each potentially eligible historic property type has been completed and submitted to the SHPO. This documentation mitigates for the possible impacts from potential alternations to or demolition of eligible properties that could result as part of the potential reuse scenarios. The HABS Level III documentation has been accepted by the SHPO as completion of the Section 106 process. Also, the Navy would incorporate protective covenants for both historic and archeological resources into a MOA which would be completed prior to any permanent transfer of the property at NWIRP McGregor. Thus, minimal impacts, if any, should occur to cultural resources.

Implementation of any of the reuse scenarios identified would result in little to no new impact to vegetation resources or wildlife species in the industrial areas of NWIRP McGregor and impacts in the non-industrial areas to be used for agricultural activities would be consistent with past activities. The potential for occurrence of any of the listed threatened and endangered species for the area as year round residents at NWIRP McGregor is unlikely due primarily to the absence of preferred habitat. There would be no impact to threatened or endangered flora and fauna as a result of the implementation of the any of the reuse scenarios. Additionally, Navy would include appropriate notifications in the deeds for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.). Thus, impacts associated with reuse of the NWIRP McGregor property to over-all biological resources should be minimal. If necessary, the acquiring entity, under the direction of Federal, state, and local agencies with regulatory authority over protected resources, would be responsible for implementing necessary mitigation measures if impacts are projected to occur.

All reuse scenarios considered can positively benefit the City of McGregor in terms of economic activity, employment, and income. The typical mixed use example would provide the optimum employment and economic activity opportunities to the area, followed by the typical community college/R&D example.

Implementation of the typical mixed use example identified would provide the optimum employment opportunity which could ultimately result in a population increase of 279 adult persons over pre-closure conditions to the McGregor area. This is based on the potential number of jobs (1,267) which would be created under this reuse scenario. Under the typical community college/R&D example identified, the McGregor area would attract a younger, college-age population. An increase in the population of approximately 129 persons over pre-closure conditions is anticipated to occur. This is based on the potential number of jobs/students (585) which could be created under this type reuse scenario. It is not anticipated that the implementation of either of these reuse scenarios would impact the over-all demographic profile of the McGregor community. Racial distribution, median age, and average family size would follow the same patterns as pre-closure conditions. The largest age

group in the community would remain the 25-44 years group. Under the typical commercial agriculture example identified, there would be a potential for the population to decrease because of limited demand for labor (approximately 58 jobs). The new demographic profile would most likely reflect one of a rural or farming community rather than one influenced by industrial activity. This typical example would reflect a lower-income demographic profile as well.

Implementation of the typical mixed use example identified could provide for a variety of employment opportunities commanding various salary ranges which could be lower than the average wages of \$13.52 per hour at NWIRP McGregor during pre-closure operations. The impact of this typical example would be an overall lower median income for workers in McGregor. Implementation of the typical community college/R&D example identified could provide for jobs which would be reflective of the City's wage average of \$10.50 per hour. Teaching positions at a community college and for the R&D facility could average \$34,000 a year, with support staff averaging \$18,000 per year. The impact of this typical example would be lower average wage rates than that at NWIRP McGregor of \$38,000 per year during pre-closure conditions. Implementation of the typical commercial agriculture example identified would provide jobs which are agricultural-related. The average agriculture-related job in Texas has a low wage rate of \$4.25 per hour, a high wage rate of \$10.00 per hour, with an average wage rate of \$5.06 per hour. Low intensity land use could also provide jobs related to storage and warehousing activities. These positions would most likely pay the minimum wage of \$4.25 per hour. These wage rates would provide an average per capita income lower than that associated with pre-closure conditions at NWIRP McGregor.

Under the typical mixed use and community college/R&D examples identified, an additional 279 and 129 adult persons and their families, respectively, could require housing in the McGregor community. This could result in more housing demand because of the increase in employment opportunities. New families moving into the McGregor area would create the demand for new or different housing types. A positive indirect impact of this type of reuse would be construction opportunities for builders in the McGregor area. Implementation of the typical commercial agriculture example identified could potentially result in families moving elsewhere to seek employment because the loss of job possible opportunities created by the implementation of this reuse scenario. This situation could result in an over-supply of housing for sale.

The capacity of the community infrastructure, including roads, potable water and sanitary sewer service, is projected to continue to operate at acceptable levels of service with all the reuse scenarios considered. Community services such as police, fire, emergency medical services and schools are not anticipated to be adversely impacted by any of the reuse scenarios.

Implementation of any of the reuse scenarios is not expected to cause adverse environmental or economic (Environmental Justice) impacts specific to any group or individual from minority or

low-income populations and children residing in the study area.

8.0 CUMULATIVE IMPACTS

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments which would result from the combination of construction, operation and associated impacts resulting from the proposed action, either retention or disposal, when added to other past, present, and reasonably foreseeable actions. Past projects, or those implemented or built before 1996, can be considered to be part of the pre-closure conditions environmental baseline already presented in this EA. Included within the concept of past projects are all maintenance activities, land development projects, and other actions that occurred before detailed analysis began on this EA. Other major redevelopment projects are not on-going in the area.

Implementation of either the No Action or Disposal alternatives would result in minimal direct impacts to either the biological or physical resources of the region as documented through-out this section. While placing the facility into long-term caretaker status (No Action) would result in only minimal impacts to biological and physical resources, it would result in the loss of what could be a valuable community resource for redevelopment and result in potential loss of economic opportunities to the local community. Placing the property into caretaker status as part of the No-Action alternative would not be an enhancement to the growth of the local area. Impacts would consist of a potential decrease in population, loss of economic activity for the area, and possible reduced employment from pre-closure conditions. Selection of the Disposal Alternative (the proposed alternative) would allow the local community to potentially realize these opportunities. The potential reuse of NWIRP McGregor facilities and land under any of the typical reuse scenarios would provide added enhancement to the potential future growth of the City of McGregor and McLennan County.

McGregor is currently located in an area dominated by agricultural activity. However, it is located within easy access of major markets in Dallas-Fort Worth, Austin-San Antonio, Fort Hood, Waco and College Station. Thus, there could be a slow shift of the City's agricultural based economy to an economy based on retail, wholesale trade services, and manufacturing if the City's preferred reuse scenario (high intensity reuse) is implemented as part of possible disposal of the facility. It is anticipated that any reuse of NWIRP McGregor would compliment the potential growth of the area. It is also expected that the impact of the North American Free Trade Agreement could encourage business development in the region which could present a possible \$558 million increase to the regional economy by the year 2003. The NWIRP McGregor facility would be a prime candidate for any development which would support this potential economic growth. Impacts in the area of McGregor are anticipated to be consistent with those discussed through-out the Socioeconomic Resources section of this EA. The typical mixed use example can provide the optimum employment and economic activity opportunities to the area, followed by the typical community college/R&D example. Long-term negative

impacts to the area should be minimal and would be controlled by existing Federal, state and local regulations depending on the specific development anticipated.

9.0 MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

Site investigations and remedial action would continue at NWIRP McGregor for any of the alternatives/reuse scenarios considered until the property is remediated and corrective action is complete. This would consist of the formal RCRA closure procedure for the RCRA permitted units and the CERCLA process to address non-RCRA sites identified by the EBS process. In the state of Texas, property identified and receiving closure concurrence of the TNRCC is transferable under the CERCLA 120(h)(4) process. Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process. The timing of the remediation effort is dependent on the extent of the remediation efforts required and available funding. The Navy would coordinate with the future owner and/or operator of the installation and would perform all required remediation prior to facility transfer and reuse.

Because the action of disposal would result in the transfer of potential eligible historic properties to other entities, HABS Level III documentation for each property type has been completed and submitted to the SHPO. This documentation mitigates for the possible impacts from potential alternations to or demolition of eligible properties that could result as part of the potential reuse scenarios. The HABS Level III documentation has been accepted by the SHPO as completion of the Section 106 process. Also, the Navy would incorporate protective covenants for both historic and archeological resources into a MOA which would be completed prior to any permanent transfer of the property at NWIRP McGregor.

Absent statutory authority, Navy cannot impose other restrictions on the future use of this surplus Federal property. Navy would, however, include appropriate notifications in the deeds for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.). The EA addresses the actions that would be necessary to mitigate the impacts associated with reuse and redevelopment of the NWIRP McGregor property. If necessary, the acquiring entity, under the direction of Federal, state, and local agencies with regulatory authority over protected resources, would be responsible for implementing necessary mitigation measures if impacts are projected to occur. Environmental impacts from any of the reuse scenarios considered would be limited to those associated with the operation of the new tenants. No major new development is anticipated under any of the reuse scenarios; existing facilities and structures would be used in a manner consistent with pre-closure conditions. New owner/tenants may need to obtain permits and adhere to all applicable Federal, state, and local laws and regulations.

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1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

Naval Weapons Industrial Reserve Plant (NWIRP) McGregor, previously operated as a government-owned/contractor-operated (GO/CO) facility, is located adjacent to the City of McGregor, approximately 20 miles (mi) (32 kilometers [km]) southwest of the City of Waco, in north-central Texas (Figure 1-1). The property occupies approximately 9,770 acres (ac) (3,954 hectares [ha]) of land situated mostly in McLennan County, Texas, with a small portion of the western property in Coryell County, Texas (Figure 1-2). The facility includes approximately 240 buildings containing approximately 850,000 square feet (79,000 square meters [sm]) of floor space, approximately 42 mi (68 km) of improved roads connecting the various activities onsite, rail lines, and an onsite water plant and storage reservoirs.

For approximately 46 years, excluding the period 1946 to 1952 when the lands were in private ownership, the U.S. Department of Defense (DOD) utilized the site for development of various weapons and weapon system components. Most recently, the operating contractor (Hercules, Inc./Alliant Techsystems) had manufactured solid propellant rocket motors.

In 1995, Hercules Inc./Alliant Techsystems informed the Navy that the company intended to relocate the McGregor operations to West Virginia. The Naval Air Systems Command (NAVAIRSYSCOM) determined that when the contractor relocated its operations to West Virginia, the Command will no longer have a requirement to retain the McGregor facility for rocket motor production. The majority of the facility is currently in caretaker status until a decision on disposal or retention of the property is reached.

1.1.1 History

The facility was originally established on approximately 18,000 ac (7,285 ha) of land by the U.S. Army Ordnance Corps in 1942 as the Bluebonnet Ordnance Plant, an aircraft bomb loading plant. The Bluebonnet Ordnance Plant started as a GO/CO facility operated by the National Gypsum Company of Buffalo, New York, employing approximately 6,500 workers. The plant operated until August 15, 1945, when the order was received to cease production. An inter-government agency transfer of the plant from the War Department to the War Assets Administration occurred on April 16, 1946. The land was then sold to a number of private concerns, with a major portion being conveyed to Texas A&M University, with a 20 year recapture provision (Alliant, 1995a).

In 1952, the U.S. Air Force acquired 11,450 ac (4,634 ha) and reactivated the facility as Air Force Plant No. 66 for the development and production of jet assistance take-off boosters. The facility was operated by Phillips Petroleum Company until 1958 when North American Aviation joined Phillips in a partnership to form Astrodyne, Incorporated. The facility then

entered into the high performance propellant field. North American Aviation bought Phillips' share of the partnership in 1959 and the plant became the Solid Rocket Division of Rocketdyne (Alliant, 1995a).

By October 1964, the majority of the work being performed at the facility was being done on Department of the Navy programs. Because of this, on November 17, 1964, the Department of the Navy agreed to accept the facility from the Air Force and on May 1, 1966, the land (approximately 11,450 ac [4,634 ha]), improvements, machinery, and equipment of Air Force Plant No. 66 were transferred to the Department of the Navy. With the Navy's reorganization, the plant became known as the Naval Industrial Ordnance Plant under the cognizance of the Naval Ordnance Systems Command (Alliant, 1995a).

In 1967, when North American and Rockwell merged, Rocketdyne became a division of North American Rockwell Corporation and finally became known as Rockwell International's Rocketdyne Division in 1973. By that time, the facility had been designated as an NWIRP under the cognizance of NAVAIRSYSCOM. Rocketdyne continued as the operator of the facility until January 1978, when Hercules Inc. assumed the operating responsibilities. Hercules, Inc. operated the facility producing rocket motors until March 15, 1995, when the Hercules Aerospace Company was sold to Alliant Techsystems Incorporated (Alliant, 1995a). This chronology is also shown in Table 1-1.

Since the early 1970s, approximately 1,700 ac (688 ha) of land have been transferred for other uses. On March 27, 1972, approximately 70 ac (28 ha) were assigned to the Department of Health, Education, and Welfare for conveyance to the McGregor Independent School District for educational use. The sewage treatment plant structure and approximately 33 ac (13 ha) of land were conveyed to the City of McGregor on June 6, 1972. This property was conveyed on the condition that the city would continue to serve NWIRP McGregor at a non-discriminatory rate. In April 1974, seven parcels of land (formerly Areas J, K, and N - about 1,600 ac [647 ha]) located around the perimeter of the site were transferred to private entities (U.S. Navy, 1995a; Alliant, 1995a).

Presently, NWIRP McGregor contains approximately 9,770 ac (3,954 ha) of land (U.S. Navy, 1994a), with the major portion of the non-industrial areas (approximately 8,000 ac [3,238 ha]) leased for agriculture use. Figure 1-3 presents the agricultural lease areas and indicates the current lessees. This use includes cattle grazing and production of grain crops. All industrial operations by the contractor (Hercules, Inc./Alliant Techsystems) ceased July 31, 1996 and the contractor vacated the facility. Most of NWIRP McGregor, excluding the areas leased for agriculture use, has been placed in caretaker status until a decision is reached on disposal or retention of the property. On February 1, 1998, a caretaker maintenance staff consisting of one full-time person and two part-time persons remained on-site. The full-time person is the facility gate operator and also does weekly inspections on-site. One of the part-time staff operates the water utility and the other handles gate operations one day a week. All buildings at

**TABLE 1-1 CHRONOLOGICAL HISTORY OF THE NAVAL WEAPONS
INDUSTRIAL RESERVE PLANT MCGREGOR, TEXAS**

Owner	Date	Operator	Remarks
U.S. Army Ordnance Corps	1942	National Gypsum Co.	Bluebonnet Ordnance Plant
	1945	None	Plant underwent decontamination by OFDAP and the Army
War Assets Dept.	1946	None	Plant conveyed to private parties - Texas A&M largest
Private companies and Texas A&M	1946	Same	
U.S. Air Force	1952	Phillips Petroleum Company	Air Force re-acquired 11,450 acres - Air Force Plant No. 66
	1958	Phillips/North American Aviation	Astrodyne
	1959	North American Aviation	Solid Rocket Division of Rocketdyne
	1967	North American Rockwell Corp. changed to Rockwell International	Rocketdyne Division
NAVAIRSYSCOM	1973	Rockwell International	Rocketdyne Division - Naval Weapons Industrial Reserve Plant (NWIRP)
	1978	Hercules Incorporated	Tactical Business Unit - NWIRP
	1995	Alliant Techsystems	Tactical Business Unit - NWIRP

Source: Alliant Techsystems, 1995a.

the site except for Buildings 300, 506, 510, and 1610 have been preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety). Building 300 is being used by the gate operator and as office space for the Navy's contamination investigators. Buildings 506, 510, and 1610 are being used by the ordnance decontamination team from the Naval Ordnance Center, Indian Head, Maryland. Approximately 20 persons can be on-site as part of these continuing operations. Water usage to the buildings located on-site has been reduced to minimal levels; however, water continues to be provided to the agricultural lessees. On an average month this would be approximately 100,000 gallons (378,530 liters) and approximately 250,000 gallons (946,325 liters) per month during the summer. Other utility usage has been reduced to minimal levels (U.S. Navy, 1998a & c).

1.1.2 Facility Layout

The operations conducted at NWIRP McGregor fell within five operational categories. Each category was unique in the type of materials handled. The operational categories and areas were:

- Administrative Area (Area A)
- Metalworking Machine Shops (Areas D and E)
- Propellant Manufacturing Plant (Areas F and M)
- Storage Magazines (Area H)
- Test Areas (Areas R and L)

Figure 1-2 shows the location of these areas. As indicated, Area A is the main administrative area for the facility. Building 100 (Figure 1-4) is the largest non-production building at the facility, totaling 51,400 square feet (4,800 sm). Built in 1967, this building is the only large facility to have a fiber optics trunk line in the local area (Alliant, 1995a).

Area D (Figure 1-5) is the machine shop and tool fabrication area, and Area E (Figure 1-6) is mostly machine shops and a vehicle maintenance/storage area. The machine shop consisted of an array of metal processing capabilities utilized to manufacture rocket motor cases. Area F (Figure 1-7) is the research and development laboratories, and Area M (Figure 1-11) is the propellant manufacturing plant. Operations conducted in these areas (F and M) consisted of propellant mixing and casting, metal degreasing, painting and rocket motor washout. Area H (Figure 1-9) is the explosive magazine storage area consisting of 118 structures of 1,080 square feet (100 sm) each. Thirty two of these structures are no longer functional because of previous structural damage. Area R (Figure 1-12) is the environmental testing static test area, and Area L (Figure 1-10) is the test instrumentation laboratory static test area. These areas were used for static firing rocket motors and performing other tests under simulated conditions (Alliant, 1995a).

In addition to the aforementioned areas, NWIRP McGregor includes Areas C, G, S, T, and several utility facilities located throughout the installation. Area C (Figure 1-4) is the industrial security area consisting of police, fire, and general inspection facilities. Area G (Figure 1-8) is a general warehousing area. Building 705 in Area G was previously owned by the Giegy Company, which used the area to formulate pesticides including hexachloride (BHC), dichlorodiphenyl-trichloroethane (DDT) and toxaphene. Area S (Figure 1-2), the explosives classification and disposal area, contains no buildings. Area T (Figure 1-13) is the crating and shipping area. The remaining buildings consist of water treatment facility buildings, aboveground and below-ground water storage tanks, two elevated water storage tanks, gate houses, and various previously abandoned buildings (Alliant, 1995a). The buildings which were previously abandoned include: Buildings 105, 418, 601, 615, 616, 623, 701, 703, 707, 708, 711, 712, 713, 714, 715, 716, 717, 718, and 1603 (Alliant, 1995b). Figures 1-14 through 1-23 present photographs of buildings which are typical throughout the facility.

1.2 ORGANIZATION OF THIS ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) consists of a summary, eight sections, and an appendix. The summary includes the major conclusions, areas of controversy, and issues to be resolved, and also presents the alternatives and potential reuse scenarios. Section 1.0, Purpose Of and Need For Action, specifies the underlying purpose and need for the proposed action. Section 2.0 describes the alternatives and reuse scenarios. Section 3.0 describes the affected environment at NWIRP McGregor and the surrounding area. Section 4.0 discusses the environmental impact of the proposed action, including any adverse environmental effects which cannot be avoided, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity and any irreversible or irretrievable commitment of resources which would be involved in the proposed action. Section 5.0 lists the various agency and public entities which were consulted during the preparation of this document. Section 6.0 lists the persons who were primarily responsible for preparing the EA. Section 7.0 provides the references cited throughout the document, and Section 8.0 provides a glossary of acronyms and abbreviations used in this report. Appendix A contains environmental baseline condition figures.

1.3 PURPOSE OF AND NEED FOR ACTION

Since the late 1980's, the DOD has been in the process of consolidating operations and reducing defense spending based upon statute and various Congressional acts. This has resulted in the closure of various military installations throughout the country, including those in the State of Texas. Generally, the overall scale of what is now needed to defend the United States and its interests has been reduced. The need for the overall amount of weapons production has been reduced as well.

As a result, the government contractor, Hercules, Inc./Alliant Techsystems, undertook its own evaluation of its business and determined that its operations should be consolidated at the Allegheny Ballistics Laboratory in West Virginia to meet its production contracts. As a result of that decision, Hercules, Inc./Alliant Techsystems ceased operations and vacated the facility on July 31, 1996. NAVAIRSYSCOM has re-evaluated the need to retain the land and buildings at NWIRP McGregor under its command and has determined that the facility will no longer be required for subsequent rocket motor production. As indicated in Section 1.1, since the contractor's departure, the majority of the plant's industrial/administrative facilities have been placed in caretaker status until a decision on disposal or retention of the property is reached by the Secretary of the Navy. The non-industrial open portions of the site remain leased for agricultural use.

The purpose of this EA is to assist the Secretary of the Navy in a series of interrelated decisions concerning the disposal or retention of the NWIRP McGregor property. This document provides the decision-maker and the public the information required to understand the future environmental consequences of the potential disposal or retention of NWIRP McGregor. The EA has been prepared in accordance with the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) Regulations (40 Code of Federal Regulations [CFR] 1500-1508), as implemented by the Department of the Navy's Environment and Natural Resources Program Manual (OPNAVINST 5090.1B).

1.4 FEDERAL ACTION

The disposal or retention of approximately 9,770 ac (3,954 ha) of Federal property, including facility buildings and utilities, is the action considered in this EA. Should it be determined to retain the property, retention would consist of placing the property into long-term caretaker status. The property would not be put to further use, but would remain in a preserved state limited to security, maintenance, environmental restoration activities, and continuation of agricultural leasing activities. A further description of caretaker activities is contained in Section 2.1.1.

Should it be determined to dispose of the property (the proposed action), the action would include the consideration of whether the property would be disposed of consistent with the National Defense Authorization Act for Fiscal Year 1996 or assigned to the General Services Administration (GSA) for disposal in accordance with the screening requirements of the Federal Property Management Regulations (FPMR). A discussion of the disposal process for the two options follows:

1.4.1 Disposal Process under National Defense Authorization Act for Fiscal Year 1996

The first disposal option would be in accordance with Section 2868 of the National Defense Authorization Act for Fiscal Year 1996. Under this act, the Secretary of the Navy is authorized

to convey the property directly to the City of McGregor, Texas without consideration of the standard disposal procedures implemented in FPMR. This conveyance is subject to the condition that the City, directly or through an agreement with a public or private entity, use the property or offer the conveyed property for use for economic redevelopment to replace all or part of the economic activity being lost at the facility. This process would result in the transfer of either all or part of the 9,770 ac (3,954 ha) of surplus property directly to the City of McGregor.

1.4.2 Disposal Process to be followed by the General Services Administration

Should the Secretary of the Navy decide not to convey either the total property or any part of the property to the City of McGregor, the second disposal option would consist of assigning the property to the GSA. Under this disposal option, GSA would be responsible for disposing of the specific property assigned to it consistent with methods implemented in the Federal Property and Administrative Services Act of 1944. The disposal methods include:

- Transfer to another Federal agency;
- public benefit conveyance to an eligible entity;
- negotiated sale to a public body for a public purpose; and,
- competitive sale to private interest by sealed bid or auction.

The selection of any particular method of conveyance merely implements the Federal agency's decision to dispose of the property. Decisions concerning whether to undertake a public benefit conveyance or economic development conveyance, or sell property by negotiation or by competitive bid are committed by law to agency discretion. Selecting a method of disposal implicates a broad range of factors and would rest solely with GSA for this option.

Upon designation for disposal by GSA, the property would be subjected to specific procedures designated to identify potential subsequent users. This is called the screening process. GSA would act as the disposal agency in performing the process of property disposal as follows:

- Notification to Department of Defense agencies of availability of property;
- notification to other Federal agencies;
- notification to state and local agencies; and
- transfer or sale of remaining property to any public or private entity.

The GSA also would be subject to compliance with the Stewart B. McKinney Homeless Assistance Act. Under this law, GSA would be required to report to the U.S. Department of Housing and Urban Development (HUD) the potential availability of underutilized, unutilized, and/or excess buildings and land. If HUD determines that the property is suitable for use by homeless assistance providers, GSA must give priority consideration to uses that assist the homeless.

1.5 RESTORATION ADVISORY BOARD

Remediation and cleanup of contaminated sites under the Navy's Installation Restoration Program (IRP) involves public participation in the restoration decision-making process. Thus, the Navy and the City of McGregor have joined to form a Restoration Advisory Board (RAB) to review and comment on technical documents and plans related to environmental cleanup of the plant. This program is separate from, but often confused with, the NEPA process because the actions usually occur simultaneously during disposal of the installation. The RAB is an advisory body designed to act as a focal point for exchange of information between the Navy and the local community regarding restoration activities. The intent of the RAB is to bring together community members who reflect the diverse interests within the community, enabling the early and continued two-way flow of information, concerns, values, and needs between the affected community and the installation.

Studies and reports for remediation actions are made available to the RAB and to the public at information repositories located in the surrounding communities. Remedial Actions under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) include formal opportunities for public participation in reviewing documents and public meetings. This EA addresses the sites under remediation by describing the nature and extent of the contamination in an overall environmental context and by referring to their remedial status (Section 3.1.6).

Site investigations and remedial action would continue at NWIRP McGregor until the property is remediated and corrective action is complete. The formal Resource Conservation and Recovery Act (RCRA) closure procedure for the RCRA permitted units at NWIRP McGregor, including the development and implementation of a RCRA Closure Plan, is required for each permitted storage, treatment or disposal unit. Although closure and remediation of the RCRA-regulated units would be conducted under RCRA, the CERCLA process, through the Navy's IRP, would proceed concurrently to address non-RCRA sites (identified by the Environmental Baseline Survey [EBS] process). In the state of Texas, property identified and receiving closure concurrence of the Texas Natural Resource Conservation Commission (TNRCC) is transferable under the CERCLA 120(h)(4) process. Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process. The timing of the remediation effort is dependent on the extent of the remediation efforts required and available funding. The public would be kept informed through the RAB about additional studies as they become available and would be invited to participate in public meetings for those actions.

1.6 INTERIM USE

Pre-disposal, short-term use of facilities by a non-Navy entity can be accomplished through the execution of leases, licenses, or permits. The terms and conditions of any interim lease would be arranged to ensure that the pre-disposal interim uses do not prejudice future retention, disposal or reuse plans for the NWIRP McGregor facility. Prior to any leasing, the Navy must complete a Finding of Suitability to Lease (FOSL), documenting that the requirements of CERCLA Section 120(h) have been met and the property poses no unacceptable risk to human health or the environment if leased for the intended use. Leased properties may be transferred by deed to future owners when the property is found suitable to transfer and the decision to transfer is made. The continuation of interim uses beyond disposal would be arranged through agreements with the new property owner(s).

At NWIRP McGregor, an Environmental Baseline Survey for Lease (EBSL) has been prepared to determine the suitability for granting a lease to the City of McGregor for sublease to various individuals in continuance of current agricultural outleases. The agriculture use includes cropland for the production of grain crops and pastureland for the grazing of cattle. The lease would cover the open areas of NWIRP McGregor, excluding buildings/structures, utilities including sewers, subsurface structures, underground storage tanks (USTs) and certain industrial areas. This use qualifies for a Categorical Exclusion under NEPA because it is not a change in prior land usage for the open areas of the facility. The lease contains specific exclusions, prohibitions and restrictions which would allow continued use of the site for agricultural purposes with acceptable risk to human health and the environment and without interference with the environmental restoration process ongoing at NWIRP McGregor. Based upon the EBSL, a FOSL has been prepared along with the appropriate lease restrictions on the utilization of the property by the City of McGregor for agricultural use.

Additionally, an EBSL has also been prepared to determine the suitability for granting a lease to the City of McGregor for use of Buildings 1102 and 1140, located in Area L, as well as land surrounding and adjacent to Area L. The City of McGregor intends to sublease the subject property to Beal Aerospace Industries for use as a rocket engine test research and development facility for small thrust engines. This use qualifies for a Categorical Exclusion under NEPA because it is not a significant change in prior land usage. The lease contains specific exclusions, prohibitions and restrictions which would allow use of the property for rocket testing purposes with acceptable risk to human health and the environment and without interference with the environmental restoration process ongoing at NWIRP McGregor. Based upon the EBSL, a FOSL has been prepared along with the appropriate lease restrictions on the utilization of the property by the City of McGregor for rocket engine testing. The lease restrictions prohibit the initiation of large thrust rocket engine testing on-site. A separate Environmental Assessment must be prepared to identify any potential environmental impacts which may be associated with large thrust engine testing prior to Government consideration and approval.

1.7 ASSOCIATED ENVIRONMENTAL DOCUMENTS

Much of the information regarding the environmental condition at NWIRP McGregor was obtained from the Department of the Navy's Environmental Baseline Survey (EBS) dated December, 1995. The base-wide EBS documents the physical condition of real property at NWIRP McGregor resulting from the storage, use, and disposal of hazardous substances, petroleum products and their derivatives. It establishes a baseline for the Navy to use in making decisions concerning real property transactions. The preparation of an EBS is required by DOD policy before any property can be sold, leased, transferred, or acquired. Although primarily a management tool, this EBS would also be used by the Navy to meet its obligations under CERCLA, Title 42 United States Code Section 9620(h)(1), as amended by the Community Environmental Response Facilitation Act (Public Law 102-426).

Updated information on the environmental condition at NWIRP McGregor is also provided from various reports and studies. These reports and studies are referenced throughout the document and included in the bibliography.

1.8 PUBLIC INVOLVEMENT

When the NEPA process for this project began, the impacts resulting from the disposal and reuse of NWIRP McGregor were unknown. The Navy concluded that an Environmental Impact Statement (EIS) was the necessary level of NEPA documentation. This was announced in the Notice of Intent published in the Federal Register on March 7, 1996. During evaluation of the impacts projected from the proposed reuse alternatives, it became apparent that impacts were not likely to be significant. Because the impacts are now better defined, the Navy has concluded that an EA is the more appropriate level of NEPA documentation.

Because the initial level of analysis was an EIS, NEPA required an early and open process, called scoping, to determine and evaluate the issues to be addressed. As part of the scoping process, the lead Federal agency invites the participation of affected Federal, State, and local agencies, and other interested persons to aid in identifying the significant issues to be analyzed or eliminated from detailed study. NEPA also requires that the Federal agency explain the NEPA process and disclose the potential positive and adverse affects that can be expected as a result of major Federal actions.

A public scoping meeting was held on March 26, 1996 at 7:00 p.m. at the McGregor High School Auditorium. Notification of the meeting was published in the Federal Register on March 7, 1996, the Waco Tribune Herald on March 13, 1996, and the McGregor Mirror on March 14, 1996. Press releases were sent to local newspapers, radio stations and television stations. Individual notices were mailed to elected officials, government agencies, local organizations, civic groups, businesses, and interested citizens.

A presentation by the Navy explained the disposal process and proposed action. Also presented at the meeting were the proposed reasonable alternatives to be examined and the potential environmental impact of these alternatives. The public was invited to comment on issues they wished examined and/or discussed in the document. Four speakers commented at the meeting.

The issues brought up at the scoping meeting are addressed in the relevant sections of this EA. The topics commented on at the meeting follow.

- Discharge of effluent from NWIRP McGregor through sewer systems.
- Underground water migration from a burn area at NWIRP McGregor.
- Asbestos and the associated abatement cost.
- Transference of NWIRP McGregor to the City of McGregor.
- The role of the Office of Economic Adjustment (OEA) in the form of financial support and assistance in the form of additional studies.
- Desire for a careful analysis of socioeconomic issues with respect to Texas A&M's research activities at NWIRP McGregor be included in the document.

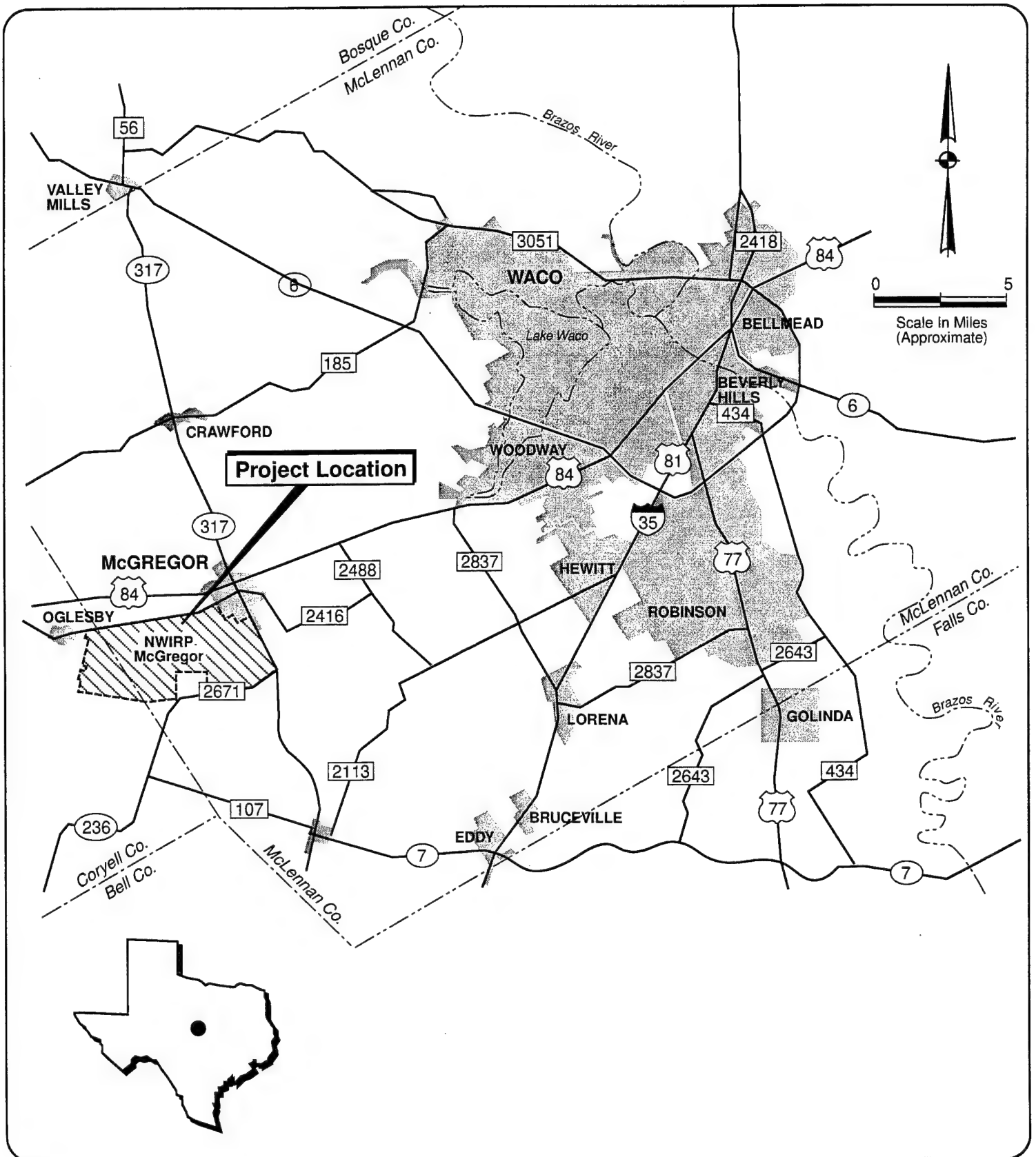
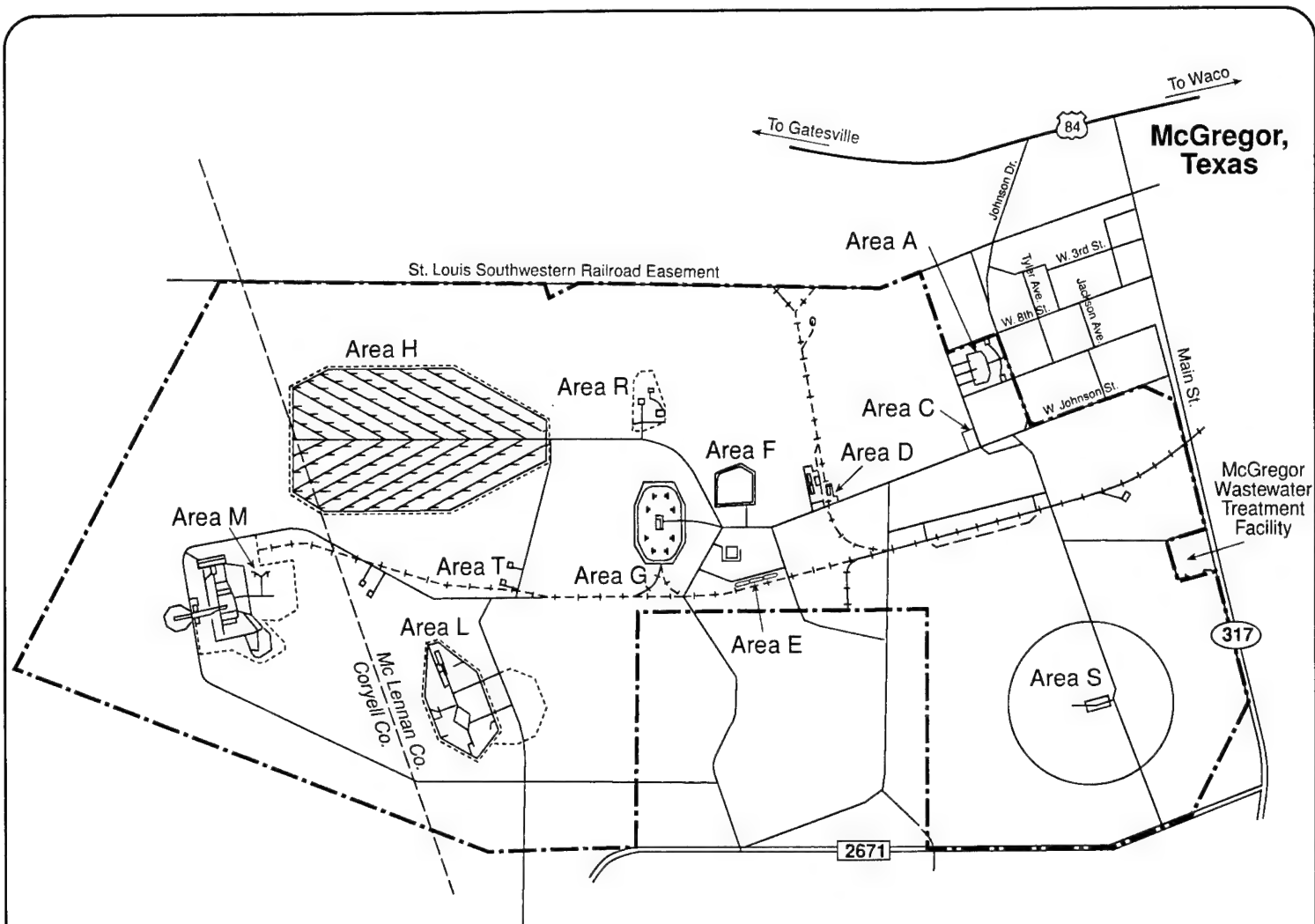


Figure 1-1. Vicinity Map (TC&B, 1996)

Note: Multiply by 1.60935 to convert miles to kilometers.



Legend

Area A	Administration
Area C	Industrial Security
Area D	Machine Shop & Tool Fabrication
Area E	Vehicle Maintenance
Area F	Research and Development Laboratories
Area G	Warehousing
Area H	Explosive Magazine Storage
Area L	Test Instrumentation Laboratory Static Test Area
Area M	Propellant Manufacturing Plant
Area R	Environmental Testing Static Test Area
Area S	Explosives Classification and Disposal
Area T	Crating & Shipping

-----	Property Line
=====	Local/Facility Road
+++++	Railroad
- - - - -	Previously Removed Railroad

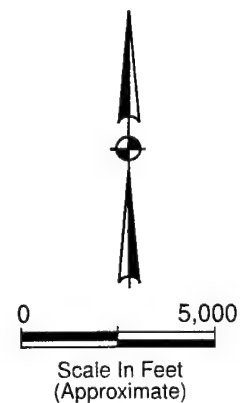
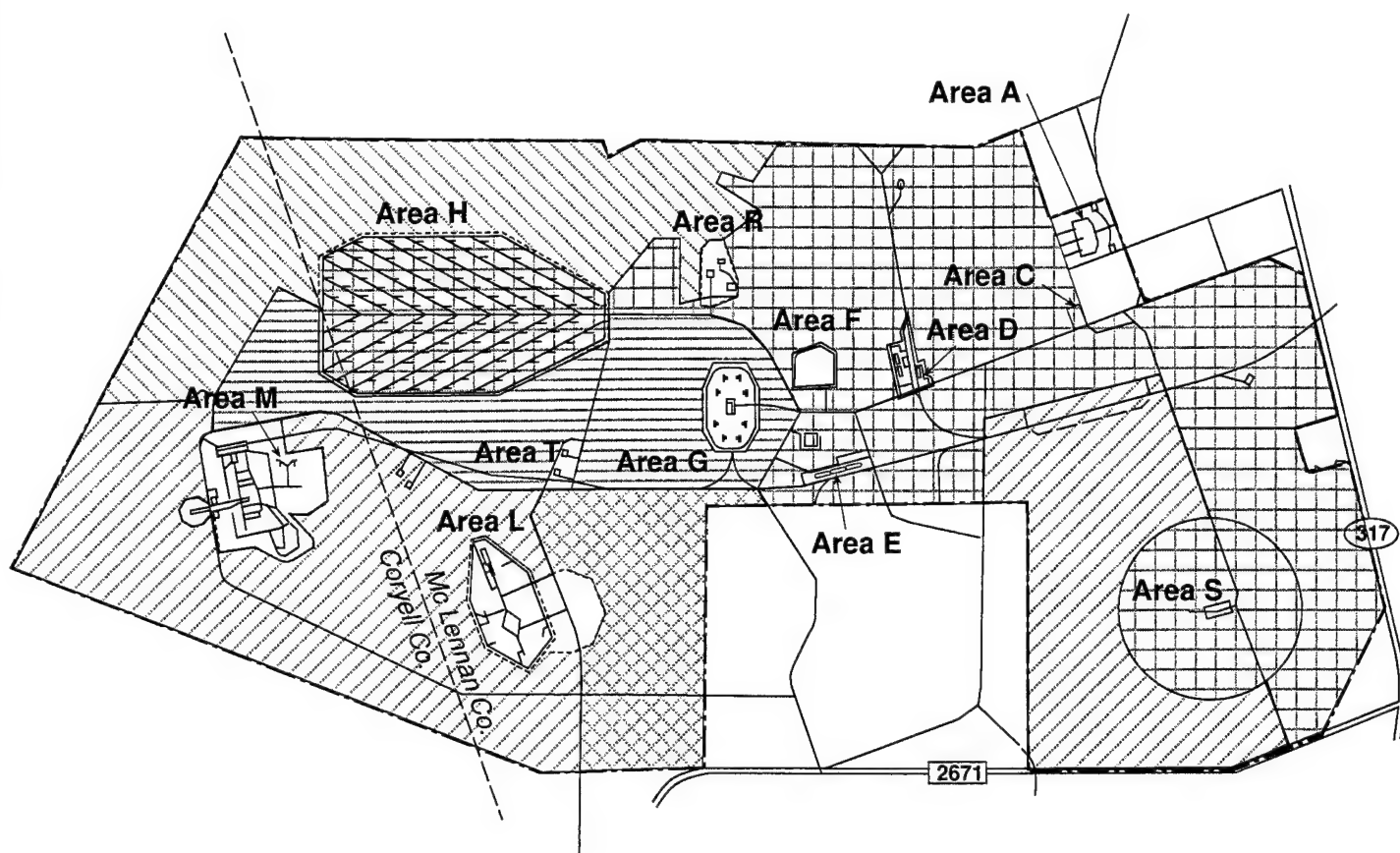
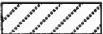
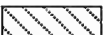
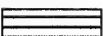

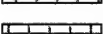


Figure 1-2. Naval Weapons Industrial Reserve Plant McGregor
(U.S. Navy, 1992; Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.



Legend

-  Lease Area 1 (Texas A&M University)
-  Lease Area 2 (Weide Farms — Mr. Charles Graham)
-  Lease Area 3 (Mr. Charles Graham)
-  Lease Area 4 (Mr. Ray Stewart)
-  Lease Area 5 (Mr. Charles Graham)

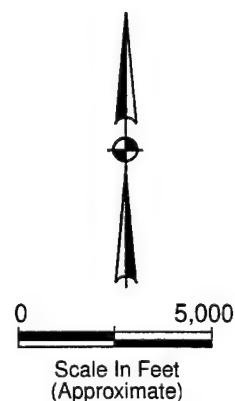
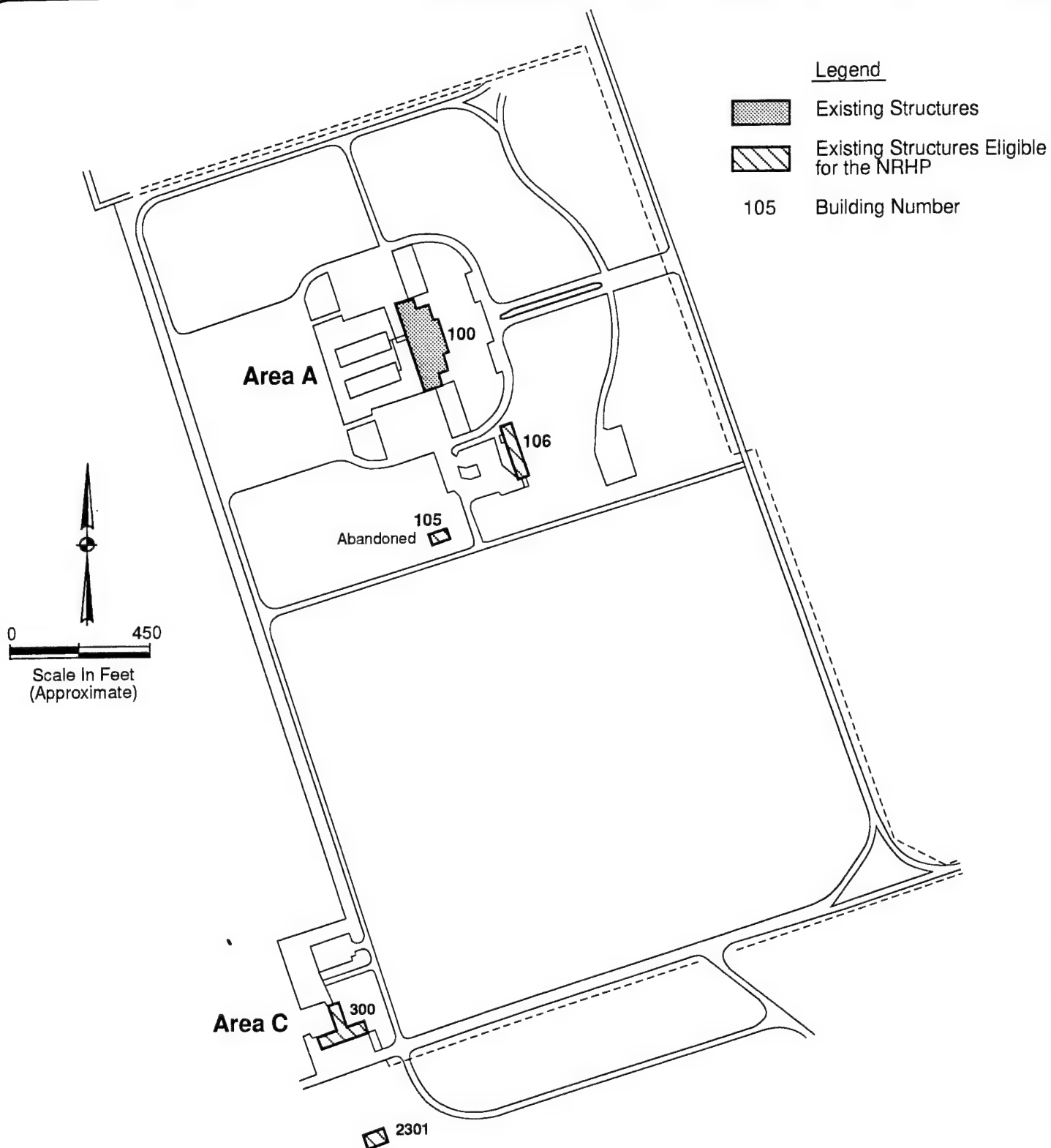


Figure 1-3. NWIRP McGregor Agricultural Lease Areas (U.S. Navy, 1994)

Note: Multiply by 0.3048 to convert feet to meters.



(See Table 3-1 for building identifications)

Figure 1-4. Areas A & C - Administration/Industrial Security (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.

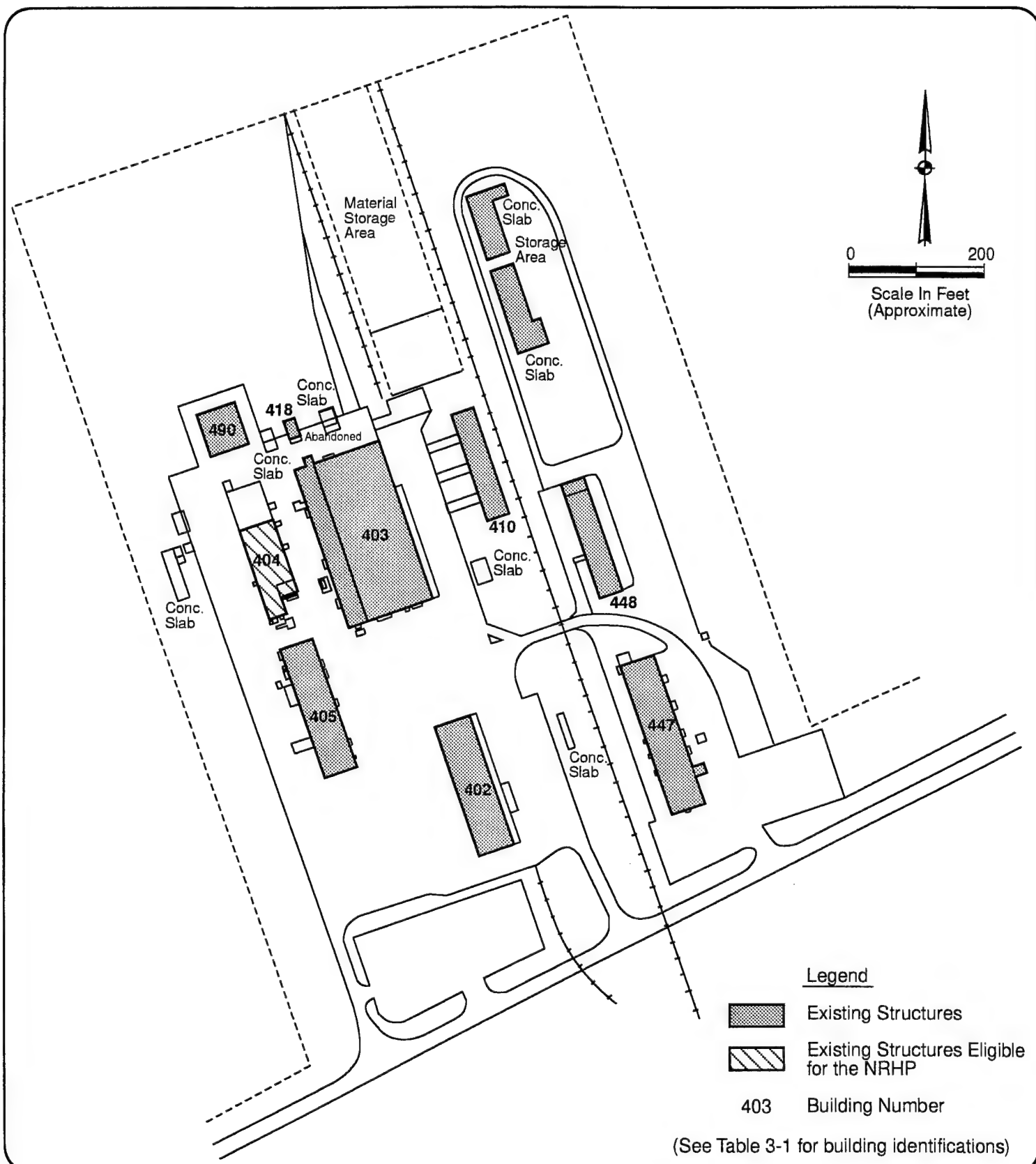


Figure 1-5. Area D - Machine Shop & Tool Fabrication (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.



Note: Multiply by 0.3048 to convert feet to meters.

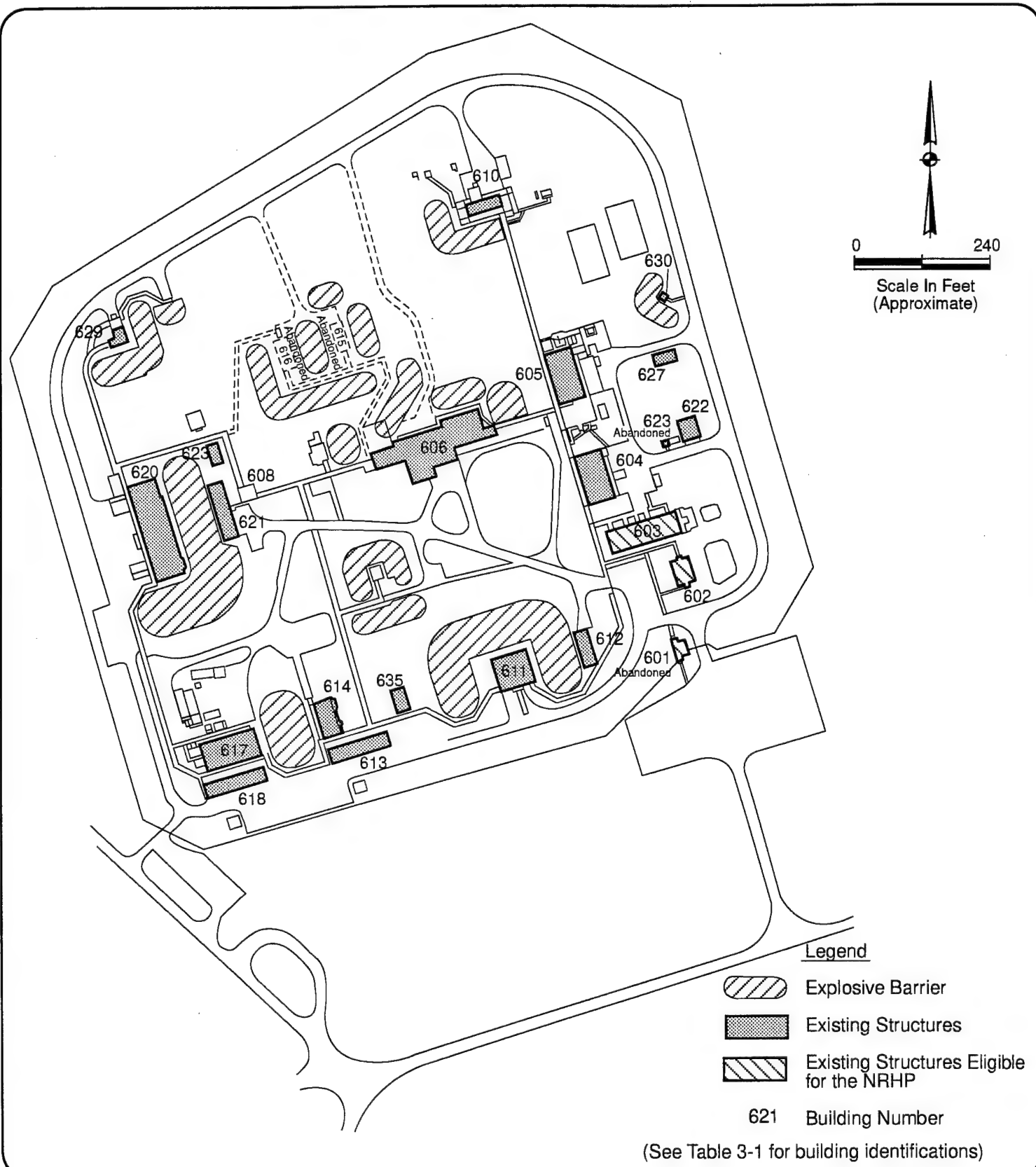
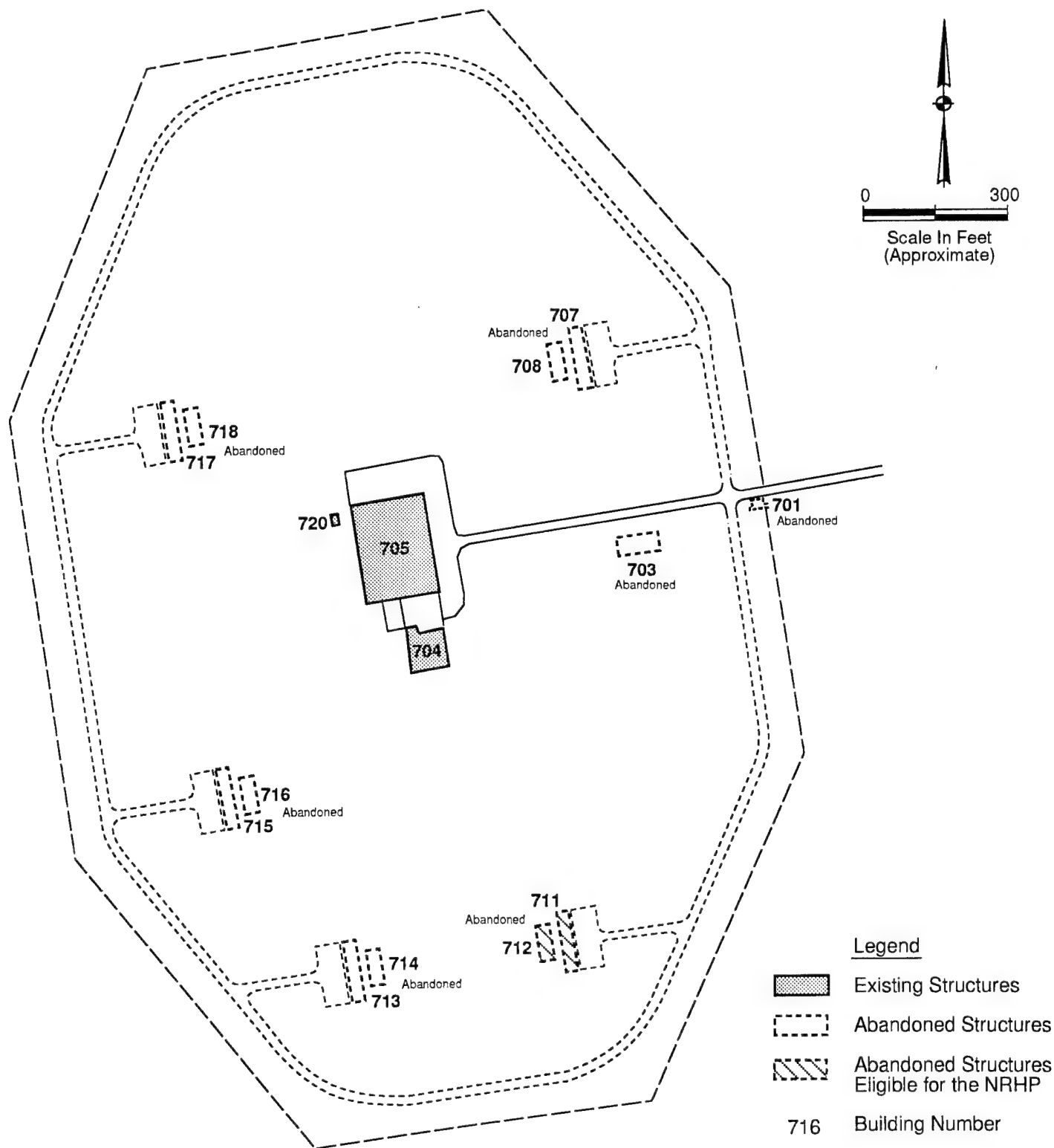


Figure 1-7. Area F - Research and Development Laboratories (Alliant, 1995a)

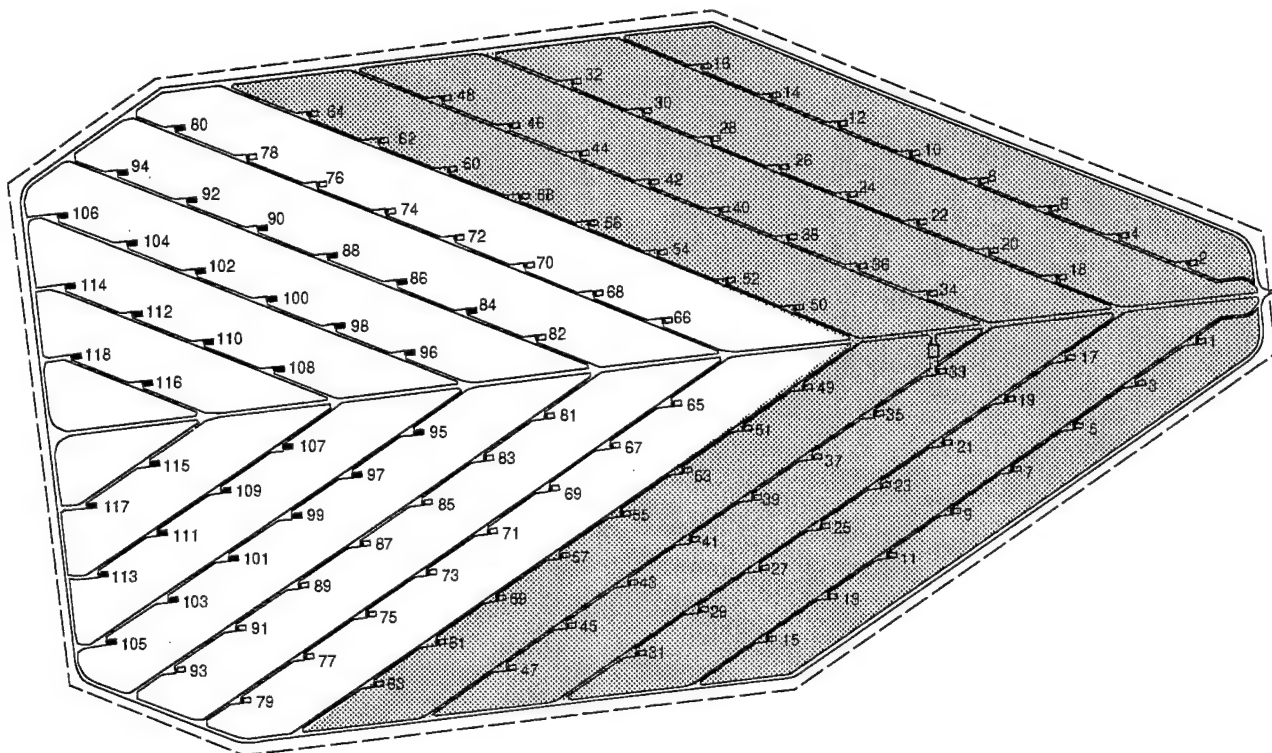
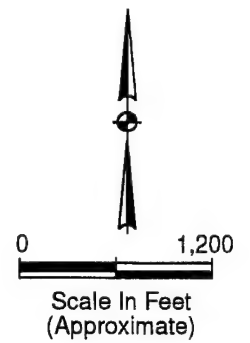
Note: Multiply by 0.3048 to convert feet to meters.



(See Table 3-1 for building identifications)

Figure 1-8. Area G - Warehousing (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.



Legend

□ Existing Structure

■ Damaged Structure

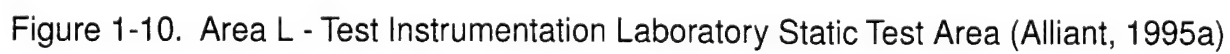
▨ Historic District (Structures Eligible for the NRHP)

57 Building Number

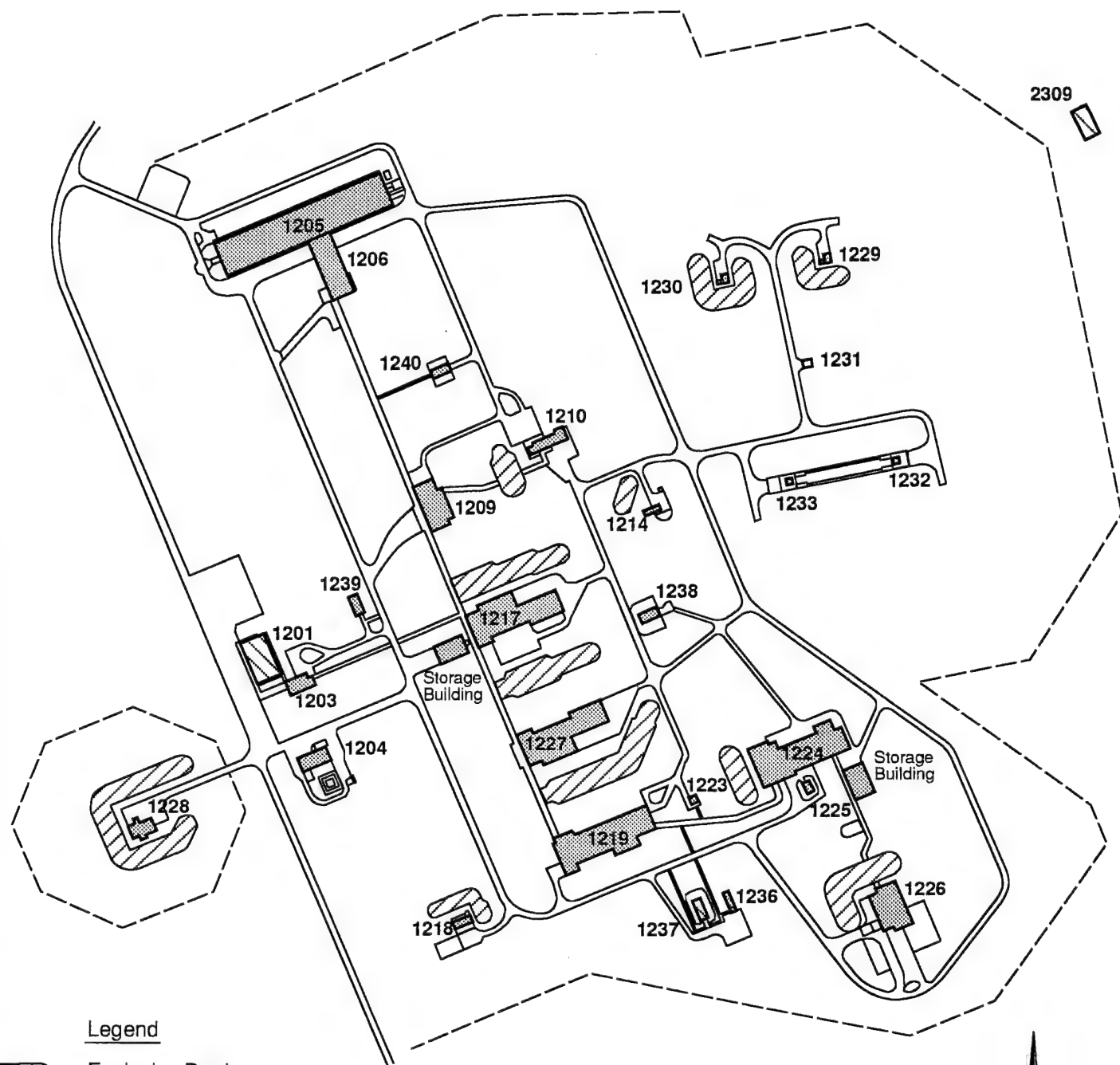
(See Table 3-1 for building identifications)

Figure 1-9. Area H - Explosive Magazine Storage (Alliant, 1995a)




Note: Multiply by 0.3048 to convert feet to meters.



Note: Multiply by 0.3048 to convert feet to meters.



Legend

-  Explosive Barrier
-  Existing Structures
-  Existing Structures Eligible for the NRHP

1224 Building Number

(See Table 3-1 for building identifications)

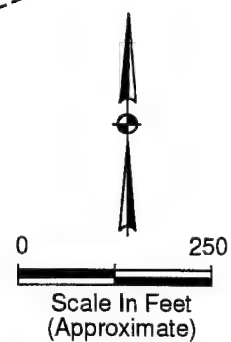


Figure 1-11. Area M - Propellant Manufacturing Plant (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.

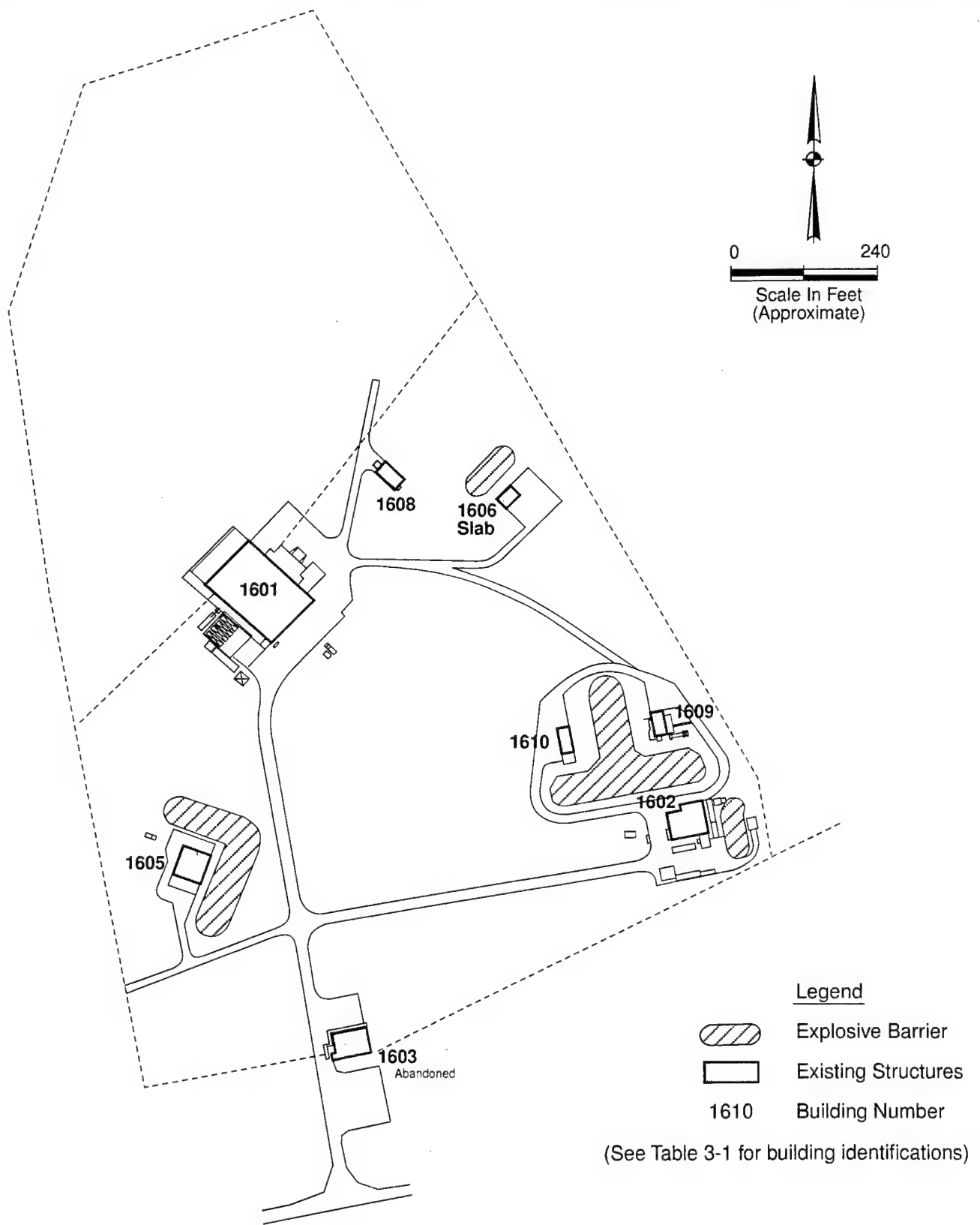
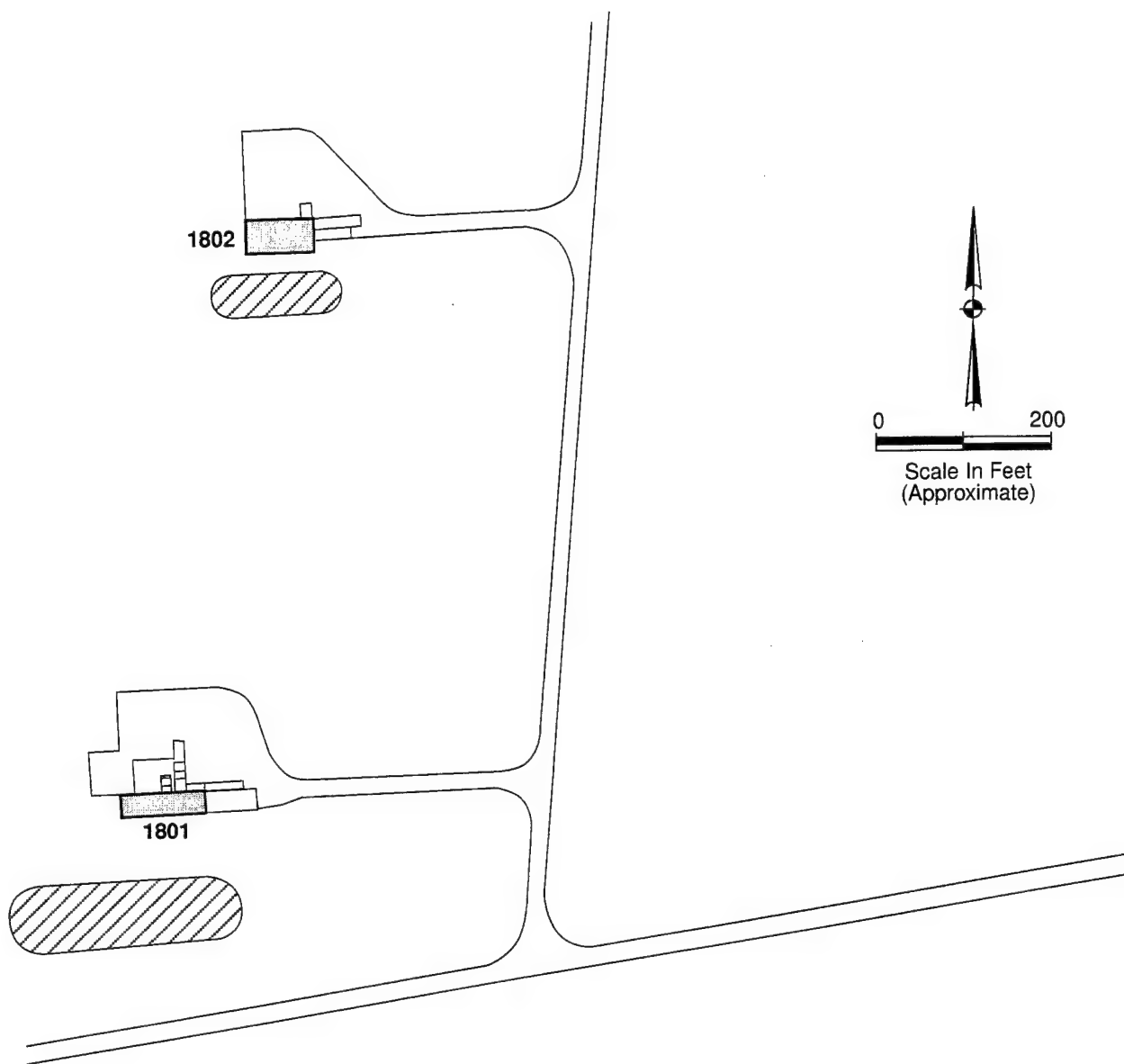




Figure 1-12. Area R - Environmental Testing Static Test Area (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.

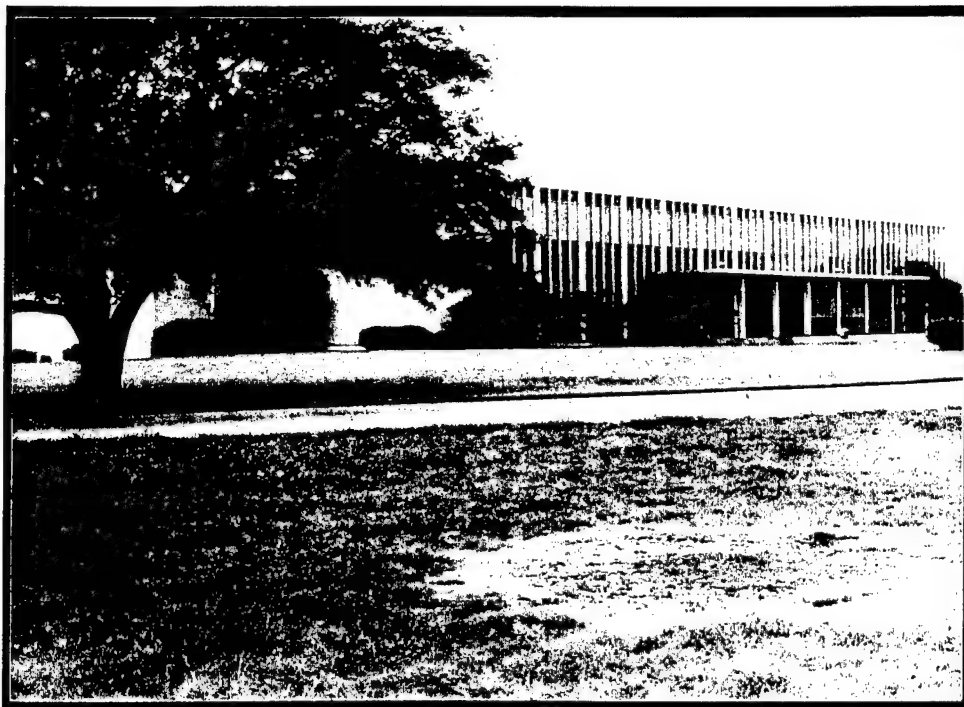


- Legend
-  Explosive Barrier
 -  Existing Structures
 - 1801 Building Number

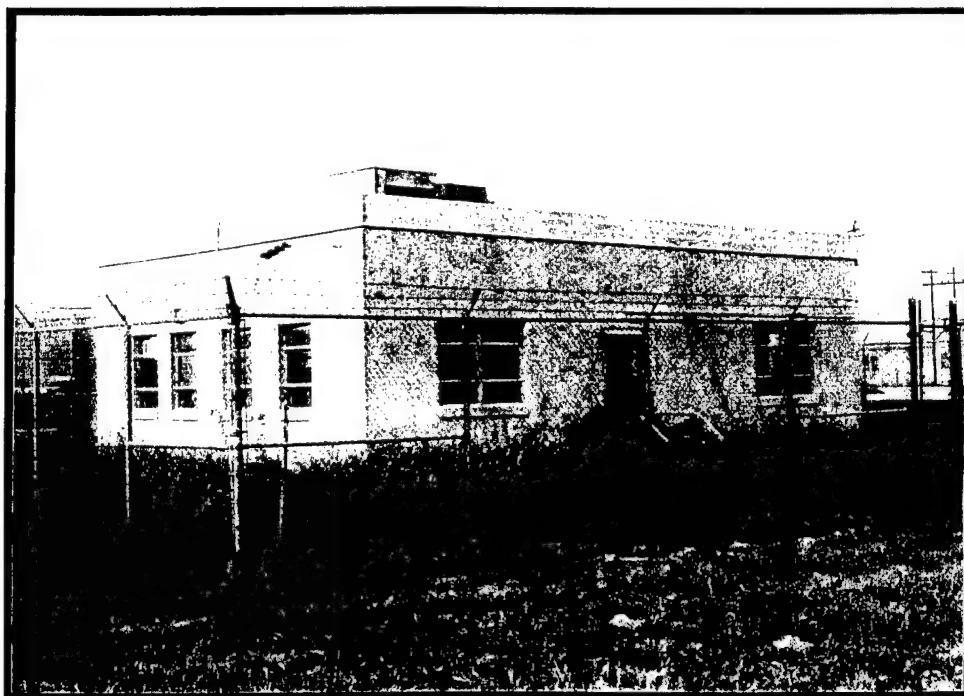
(See Table 3-1 for building identifications)

Figure 1-13. Area T - Crating & Shipping (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.



AREA A - Building 100, Administration Building

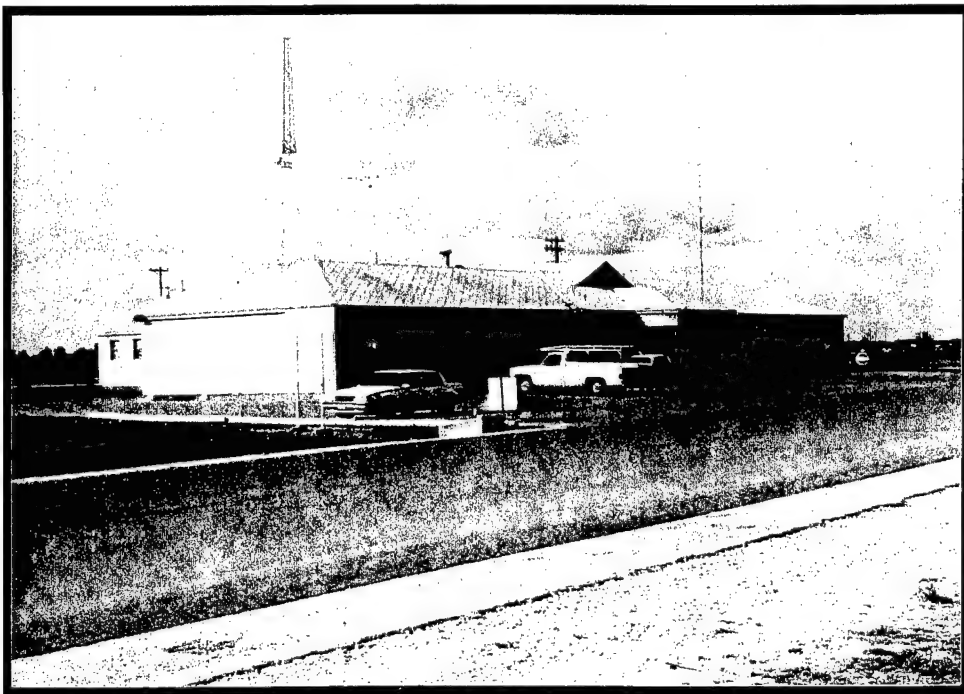


AREA A - Building 105, Telephone Exchange Building

Figure 1-14. Area Photographs of Typical Buildings at NWIRP McGregor

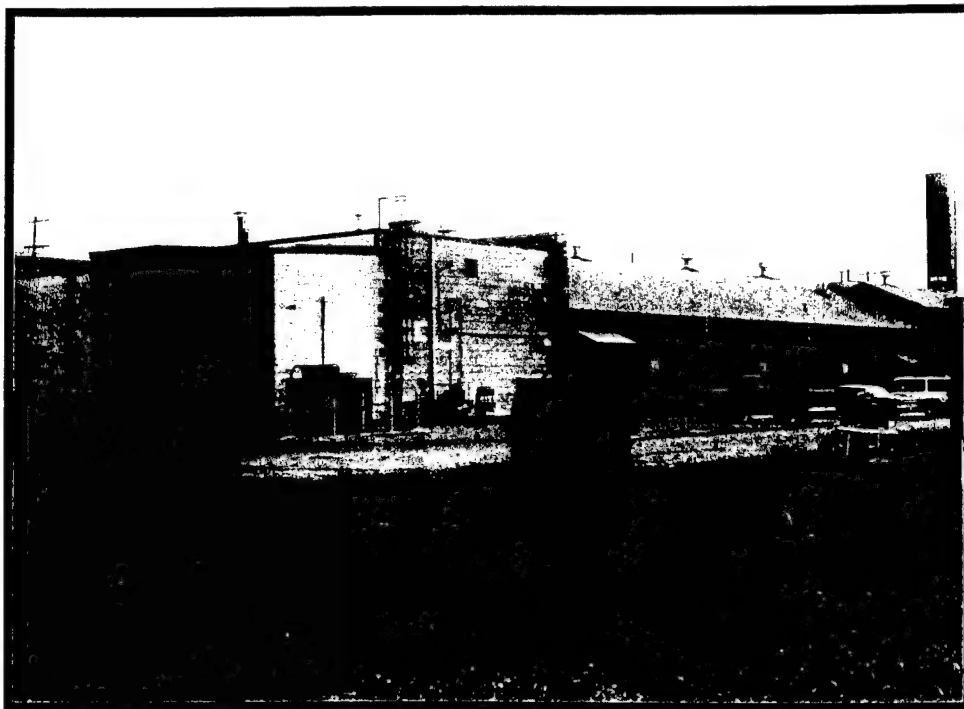


AREA A - Building 106, Administration Building

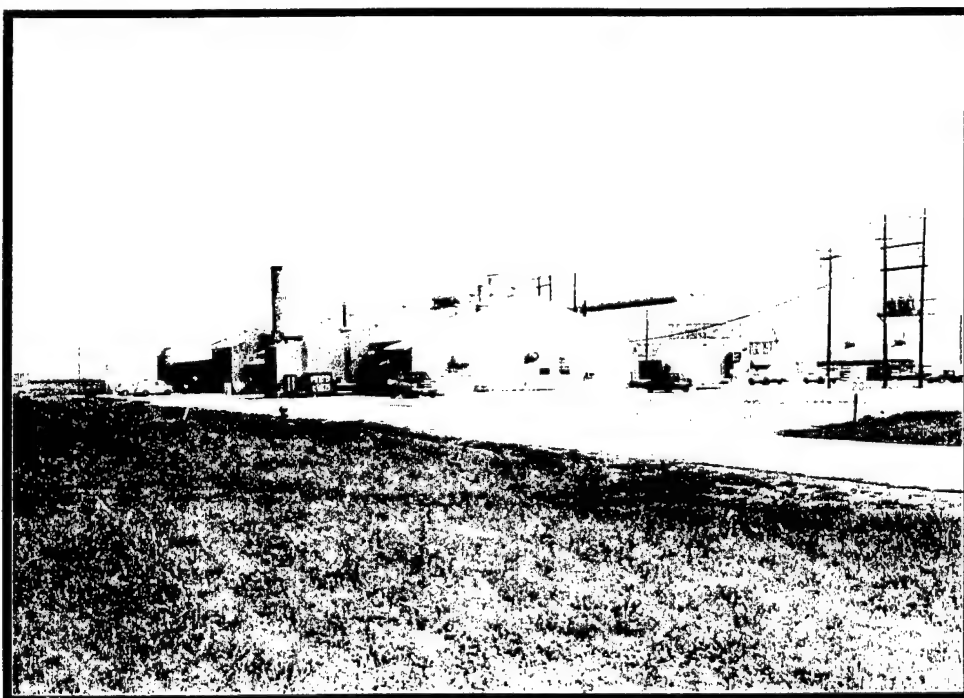


AREA C - Building 300, Police and Fire Station

Figure 1-15. Area Photographs of Typical Buildings at NWIRP McGregor

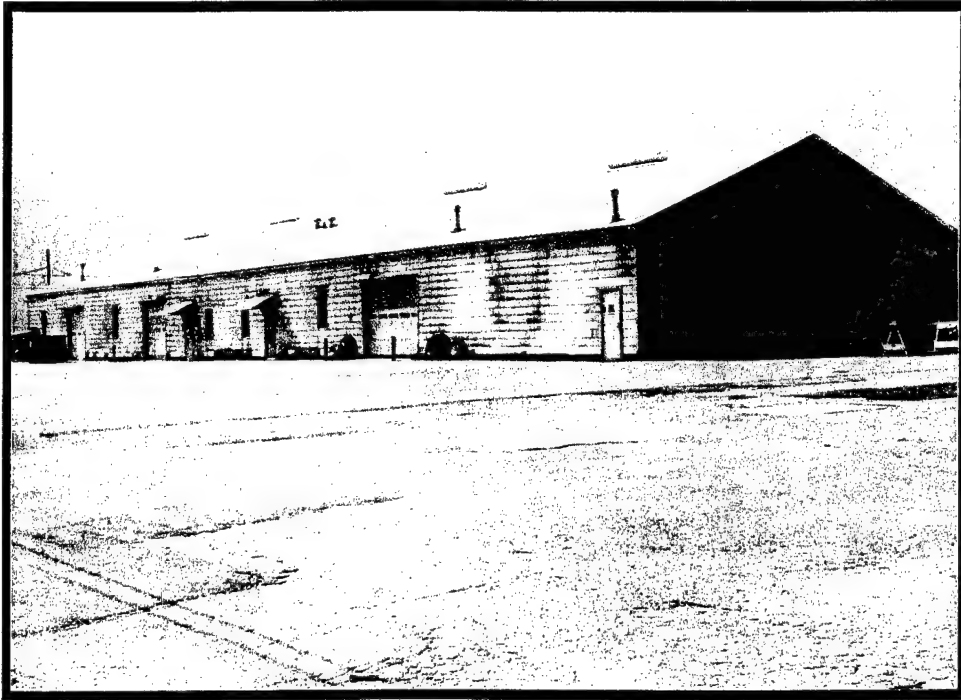


AREA D - Building 404, Lab and Heat Plant Building

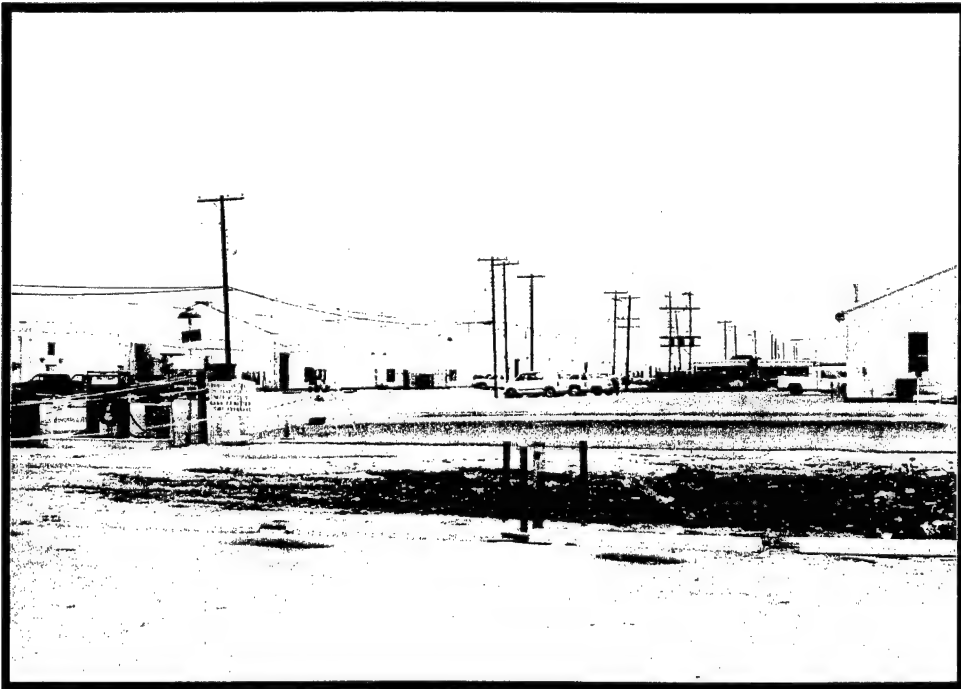


AREA D - Overview

Figure 1-16. Area Photographs of Typical Buildings at NWIRP McGregor

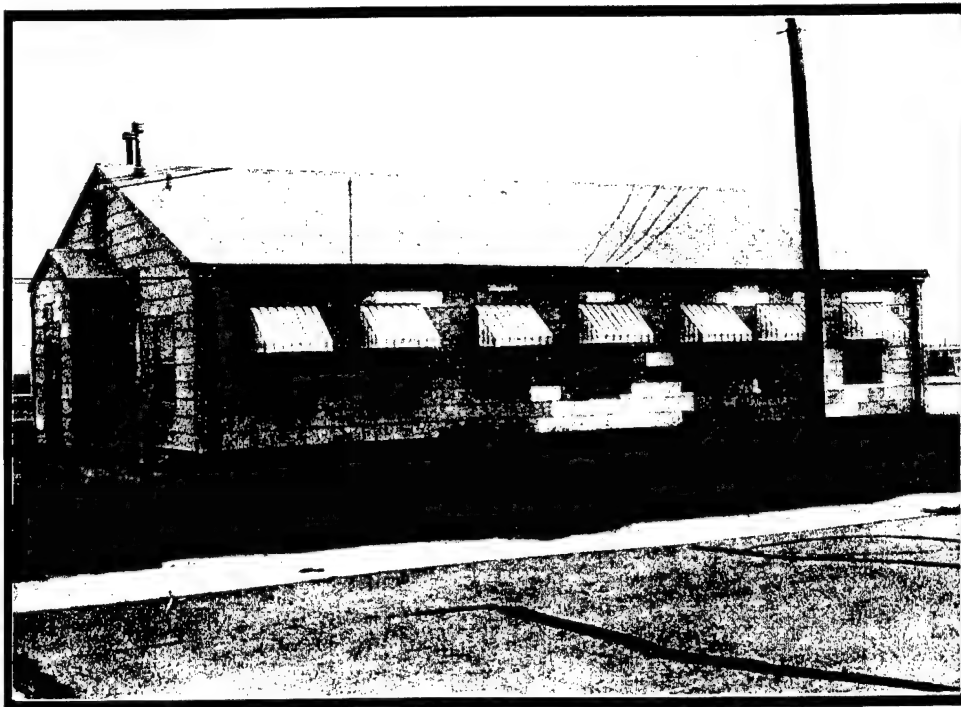


AREA E - Building 510, Garage

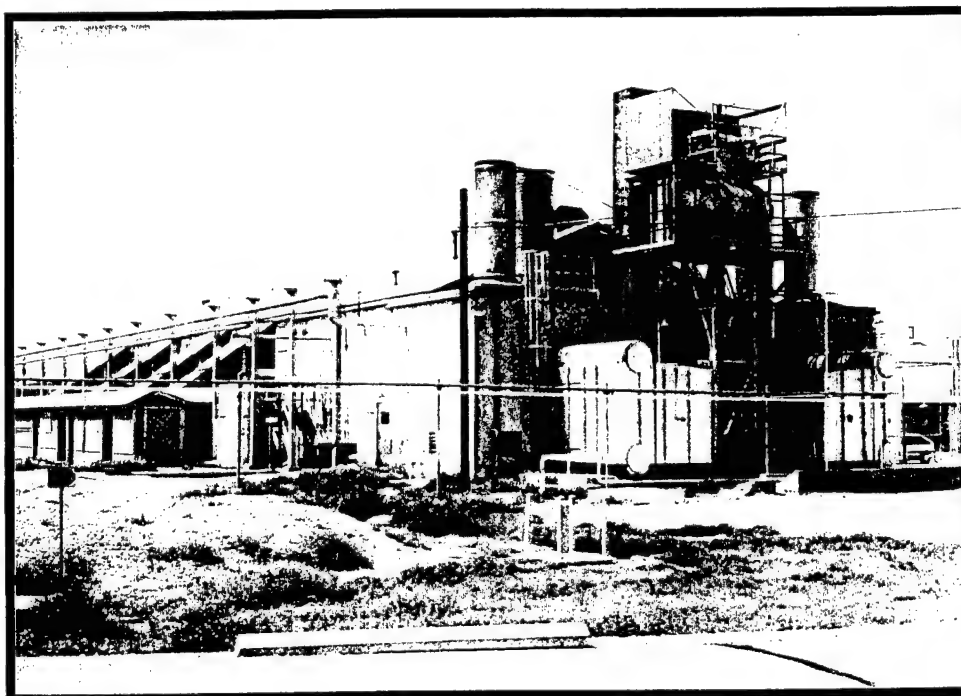


AREA E - Overview

Figure 1-17. Area Photographs of Typical Buildings at NWIRP McGregor

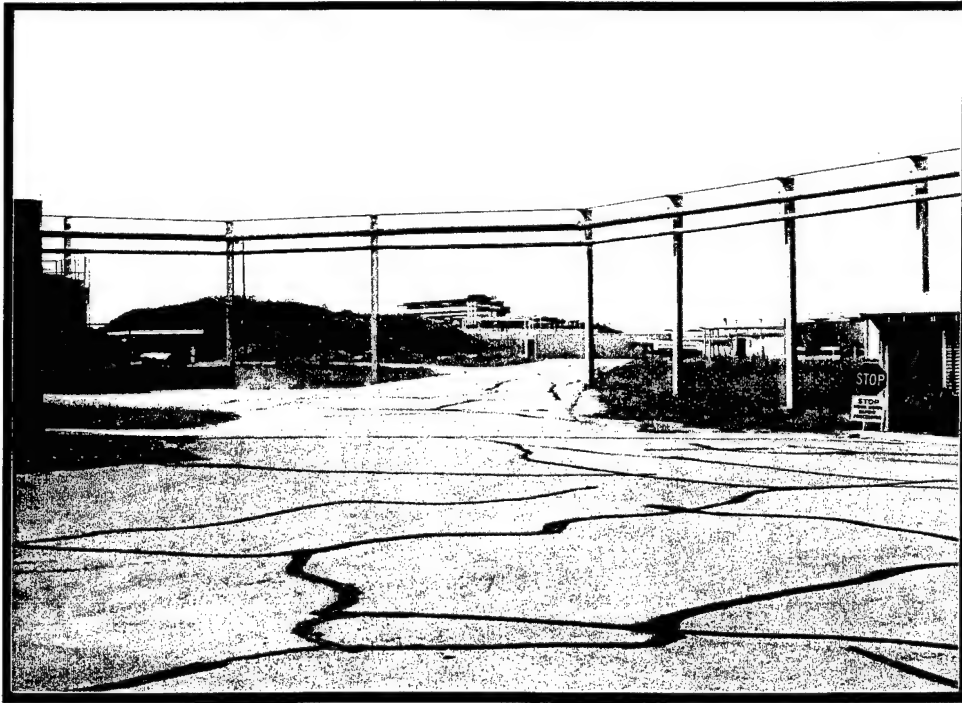


AREA F - Building 602, Administrative Building



AREA F - Building 603, Boiler Building

Figure 1-18. Area Photographs of Typical Buildings at NWIRP McGregor



AREA F - Overview

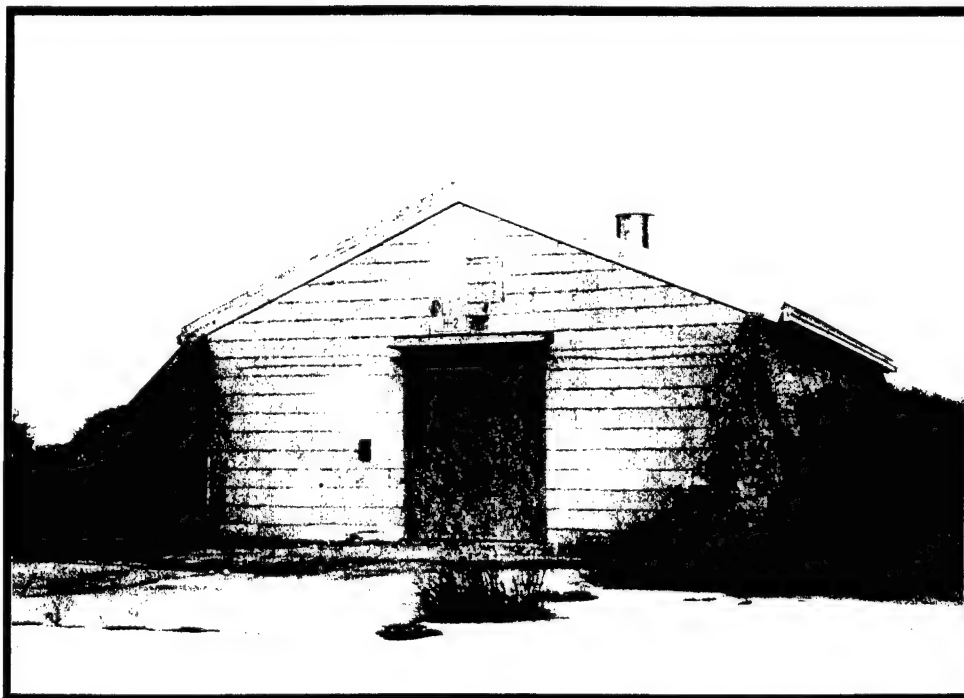


AREA G - Building 711, Storage (Vacant)

Figure 1-19. Area Photographs of Typical Buildings at NWIRP McGregor

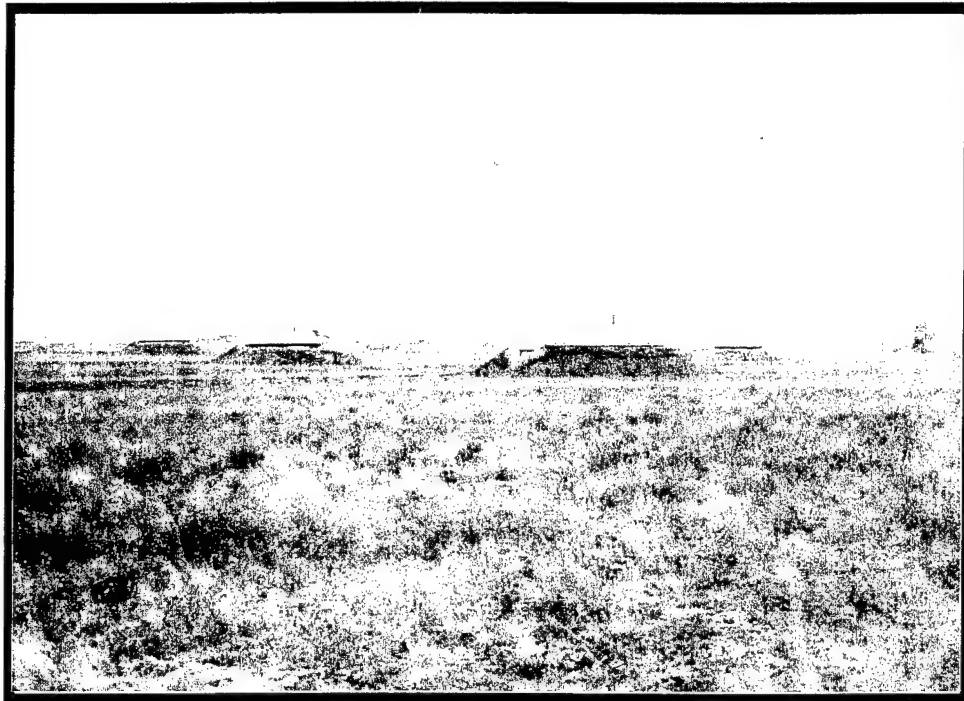


AREA G - Overview

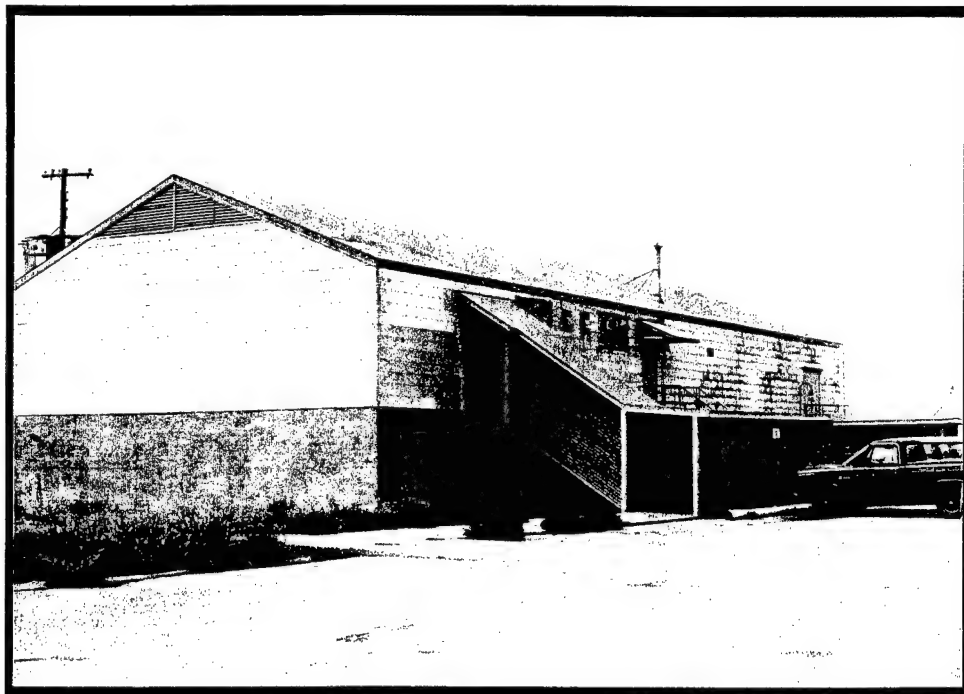


AREA H - Building 8002, High Explosive Magazine Area

Figure 1-20. Area Photographs of Typical Buildings at NWIRP McGregor

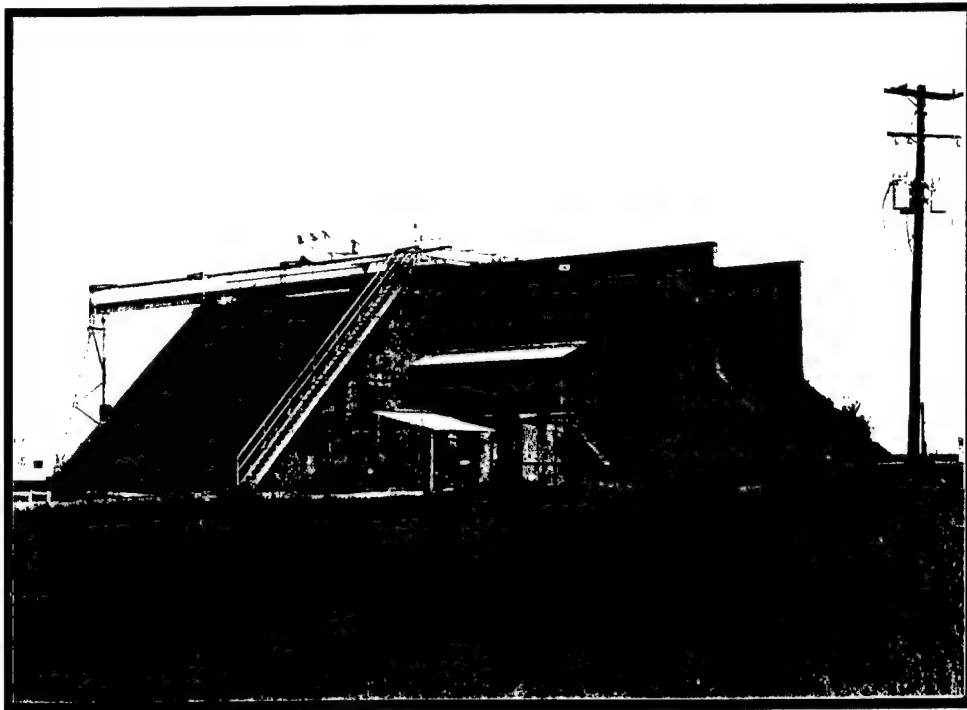


AREA H - Overview

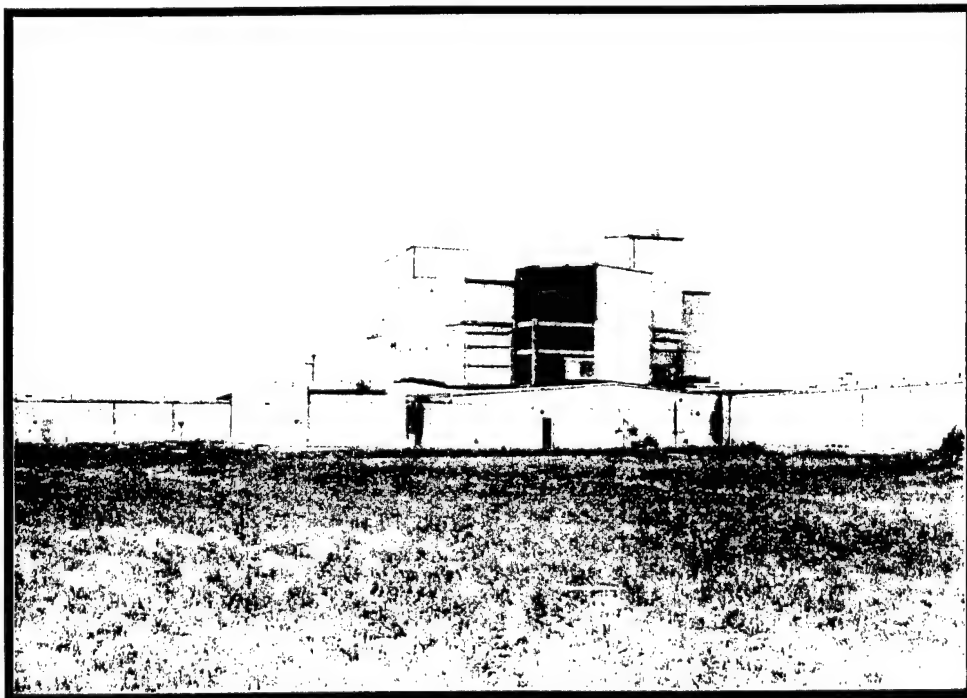


AREA L - Building 1105, Electronic Systems Administration Office

Figure 1-21. Area Photographs of Typical Buildings at NWIRP McGregor

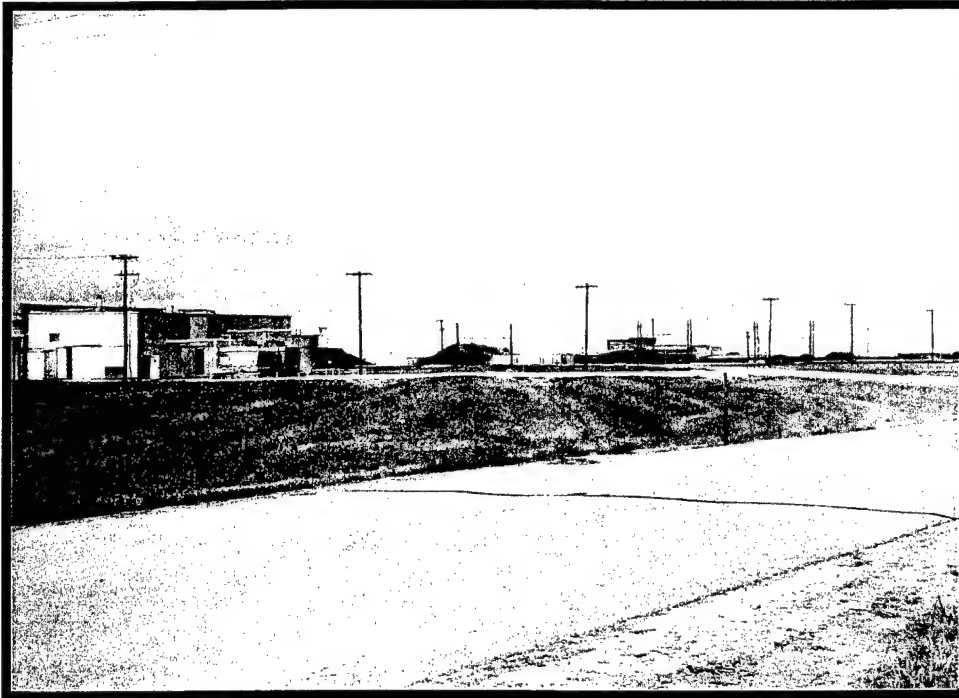


AREA L - Building 1140, Production Facility

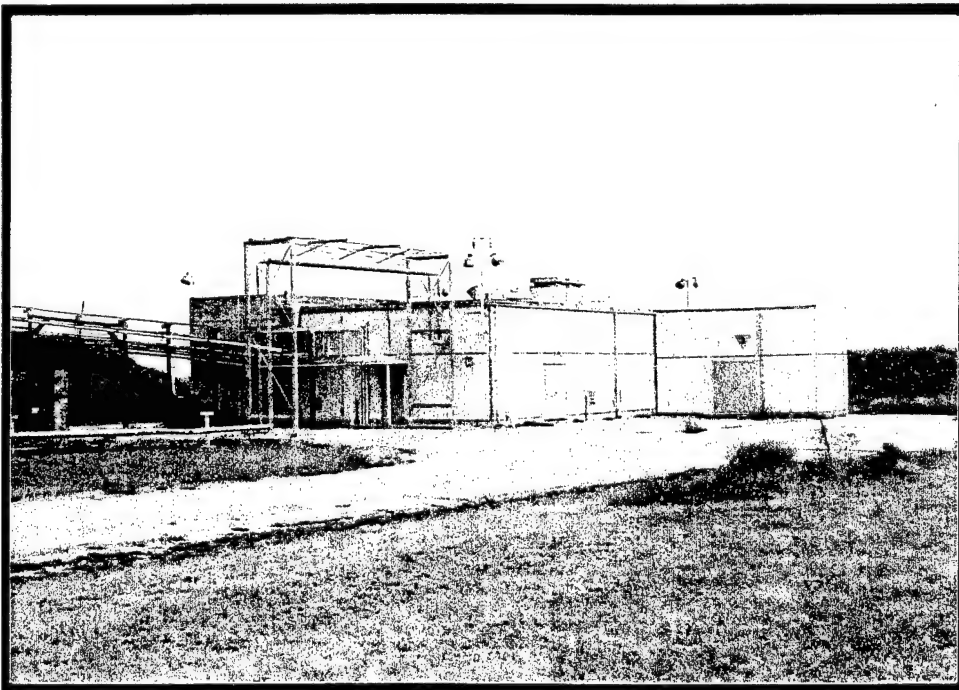


AREA M - Building 1209, Product Storage

Figure 1-22. Area Photographs of Typical Buildings at NWIRP McGregor



AREA M - Overview



AREA R - Building 1602, Propulsion Systems Lab

Figure 1-23. Area Photographs of Typical Buildings at NWIRP McGregor

2.0 ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This section describes the No Action and Disposal alternatives along with a discussion of the reasonably foreseeable reuse of the property after ownership is transferred. The No Action Alternative consists of retention of the property by the Navy in caretaker status. The Disposal Alternative (the proposed alternative) includes the consideration of whether to dispose of the property consistent with the National Defense Authorization Act for Fiscal Year 1996 or assign the property to GSA for disposal in accordance with the screening requirements of FPMR. For the purposes of NEPA analysis, direct environmental consequences or impacts are those associated with the No Action Alternative and either Navy's or GSA's disposal of the property. Indirect impacts are associated with the actions taken by others for the reuse of the property after disposal. The specific reuse of the facilities after ownership is transferred would be beyond the direct control of either the Navy or GSA. The City of McGregor has assisted in the development of a number of conceptual reuse scenarios that are reasonably foreseeable for future reuse of the property for analysis of indirect impacts.

2.1 NAVY ALTERNATIVES

2.1.1 No Action Alternative

The No Action Alternative would result in the U.S. government retaining ownership of the Navy-owned properties after closure. The properties would not be put to further use but would be preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety). A full-time caretaker/maintenance staff would be established to ensure base resource protection, grounds maintenance, existing utilities operations, as necessary, and building care are accomplished. No other military activities/missions would be performed on the property. Site contamination investigations and cleanup would continue.

The future land uses and levels of maintenance would be as follows:

- Maintain structures in moth-balled condition to prevent deterioration. This would involve disconnecting or draining some utility lines and securing facilities;
- Provide limited maintenance on roads to ensure access;
- Provide limited grounds maintenance of open areas. This would primarily consist of infrequent cutting to eliminate fire, health, and safety hazards; and,
- Maintain existing outleases which are not terminated at the time of the action. Maintenance of the leased areas would continue consistent with the terms of the specific agricultural leases.

For the purpose of environmental analysis, it is anticipated that the full-time caretaker/maintenance force would consist of approximately two persons. This staff would operate the

gate and water utility, perform inspections, and arrange for grounds maintenance activities as necessary. Water would continue to be provided to the agricultural lessees unless the leases are terminated as part of the action. On average it would be approximately 100,000 gallons (378,530 liters) per month except during summer months when this could increase to 250,000 gallons (946,325 liters) per month (U.S. Navy, 1998c). Total costs associated with maintaining NWIRP McGregor for as long as necessary in caretaker status under the No Action Alternative are estimated to be approximately \$1.3 million per year. Contracts for maintenance work alone could be as much as \$1.1 million per year. It is anticipated that the contracts would be handled by the community and local labor force (U.S. Navy, 1996).

2.1.2 Disposal Alternative

As indicated in Section 1.4, two options are available to the Navy for disposal of the property (the proposed alternative). The National Defense Authorization Act for Fiscal Year 1996 authorizes the conveyance of all right, title, and interest (including any improvement thereon) of the NWIRP McGregor facility to the City of McGregor, Texas. The conveyance is subject to the condition that the City, directly or through an agreement with a public or private entity, use the conveyed property (or offer the conveyed property for use) for economic redevelopment to replace all or a part of the economic activity being lost as a result of the action. Under this act, the Secretary of the Navy is authorized to convey the property without consideration of the standard disposal procedures implemented in the existing FPMR. This process would result in the direct transfer of approximately 9,770 ac (3,954 ha) of Federal property, including approximately 240 buildings, to the City of McGregor for economic redevelopment. Should it be decided not to convey either the total property or any part of the property to the City of McGregor, that property would be assigned to GSA for disposal consistent with the standard disposal procedures implemented in FPMR. A discussion of the specific screening process to be followed by GSA is contained in Section 1.4.2.

Federal disposal would precede implementation of any of the generic reuse scenarios identified in Section 2.2, except for interim leasing activities (see Section 1.6). In addition to interim leasing activities, pre-disposal activities have included placing the majority of the site into caretaker status and continuation of site cleanup operations.

2.2 REUSE SCENARIOS

Relative to the first Navy disposal option (Section 1.4.1), and in accordance with Section 2868 of the National Defense Authorization Act for Fiscal Year 1996, the City of McGregor has chosen to act as the single local authority to receive NWIRP McGregor. The City has begun the process of having the Navy-owned land transferred to local control and coordinating redevelopment efforts associated with the reuse of NWIRP McGregor. As part of this effort, the City has developed a framework of conceptual reuses for NWIRP McGregor. The reuses under consideration were developed to meet specific key community goals for redevelopment.

These goals included: maximum net economic return to local government; maintaining the economic health of the surrounding area; and, enhancement of the quality of human life and environment.

Since the specific reuse of the facility would be beyond the direct control of either the Navy or GSA, the EA analyses a range of generic reuses to represent the most likely or probable intensity levels of land use that could occur after disposal. The generic reuse levels the Navy developed for consideration were formulated by evaluating the City's conceptual reuses, existing site land use conditions, adjacent land use, and market trends of the area. These generic levels would be typical for either of the two disposal options considered and would be used to determine the indirect impacts of the Federal action.

Assumptions Considered for Reuse Analysis

It should be noted that all reuse scenarios evaluated in this EA are conceptual in nature. In order to analyze potential indirect environmental impacts, general assumptions have been made. These assumptions include the following:

- Only those buildings that have been identified in acceptable operating condition prior to securement or in a state of lay away that can be readily activated to operational conditions (including all utility service to buildings, Heating/Ventilation/Air Conditioning [HVAC], plumbing and fixtures, electrical distribution and lighting, and painted surfaces) have been included as part of the indirect reuse impact assessment. Based upon inspections by Navy personnel, this includes the majority of the buildings located at the site, except for the 32 explosive magazines in Area H which are no longer functional due to previous structural damage (Figure 1-9), those buildings in Area G which were previously abandoned (Figure 1-8), and the Melt/Pour Building (no currently assigned building number) located in Area L (Figure 1-10) (U.S. Navy, 1995c & 1996d). The structural damage at the 32 explosive magazines in Area H has been cleaned-up such that only slabs and walls exist (U.S. Navy, 1998a).
- Employment and population changes resulting from implementation of each reuse scenario are consistent with land use designation;
- Transportation and utility effects of each scenario are a function of increased or decreased consumption resulting from reuse;
- The "zig-zag" between North Johnson Drive and its south extension past West Johnson Street (Figure 1-2) could be improved into a standard four-way intersection to facilitate north-south traffic down to the rail spur and beyond. This would provide a better loop connection between HWY 84 and HWY 317 and encourage development along the loop for all reuse scenarios;

- Some scenarios use a phased-approach to land use planning; and
- Private residential development is not considered in any of the reuse scenarios because of time and cost constraints associated with reclamation of property to residential standards.

Land Use Intensity Defined

The reuse scenarios discussed in this document reflect various levels of intensity-based land use based upon the conceptual reuses initially developed by the City of McGregor. The purpose of defining land use based on intensity is to help identify the possible reuses which would provide the highest economic benefit to the community. The intensity categories identified in this section are applicable to the local situation in McGregor. The intensity-based land use categories used to define reuse scenarios in this EA follow (Table 2-1):

Low Intensity - Commercial agriculture

Medium Intensity - Retail and/or institutional

High Intensity - A mixture of industrial, commercial, distribution, and/or agriculture with multiple operators

The intensity gradient aids in the evaluation of economic benefit of the reuse scenarios and in assessing environmental sensitivity of the proposed reuses and their potential impacts. In the above categories, the intensity levels range from Low Intensity (commercial agriculture) to High Intensity (mixed use). Retail and institutional uses appear in the middle of the range. These reuse scenarios represent uses which would be considered less than the operation level which existed under the previous user (Hercules Inc./Alliant Techsystems). However, the potential reuse of the property by one operator performing industrial and heavy manufacturing is no longer reasonably foreseeable for the future use of the property.

Related to intensity-based land use is employment. Employment aids in gauging economic benefit, as well as assessing social impacts. Employment density is defined as workers per ac (0.4 ha) or workers per gross square feet (sm) of building floor area, and is used in estimating employment. Employment densities for the above categories of land use can vary from very low (one person per 200 or more ac [81 ha] for agriculture) to moderate (one person per 1,000 square feet (93 sm) to one person per 10,000 square feet (930 sm) of building floor area for industrial uses) to high (up to one person per 100 square feet (9 sm) for high intensity office use). Generally, labor-intensive commercial or institutional uses tend to have higher employment densities than capital-intensive uses such as manufacturing or other industrial uses.

Residential population is not included in the above land use intensity categories, as the reuses do not include residential development. Should subsequent mitigation indicate residential use

TABLE 2-1 REUSE SCENARIOS

Land Use Alternative	Level of Intensity Definitions*	Typical Example
I. High Intensity	A mixture of industrial, distribution, commercial, and/or agricultural purposes by multiple operators	Administrative offices, machine shops, vehicle maintenance, storage/warehouses, light to heavy industry, open space/park, and/or agriculture. Estimated employment: 1,267
II. Medium Intensity	Retail and/or institutional purposes	Community college, agriculture oriented research and development facilities, and/or experimental farming. Estimated employment: 285 Estimated students: 300
III. Low Intensity	Commercial agricultural uses	Farming, grazing, agricultural processing, and storage. Estimated employment: 58

*Defined for reuse scenarios typical of the McGregor study area.

of some parcels of land feasible, and it is determined that residential reuse is consistent with the "economic redevelopment" constraints contained in the National Defense Authorization Act for Fiscal Year 1996, residential use would be considered equivalent to Medium Intensity development with that level of associated impacts.

Table 2-1 gives the definitions (as defined for reuse scenarios typical of the McGregor study area) of the above intensity-based land use categories, including typical examples and estimated employment. A discussion of the intensity-based scenarios follows including a discussion of the City of McGregor's preferred conceptual reuse. The analysis of indirect impacts (Section 4.2) is based on these intensity-based land use categories.

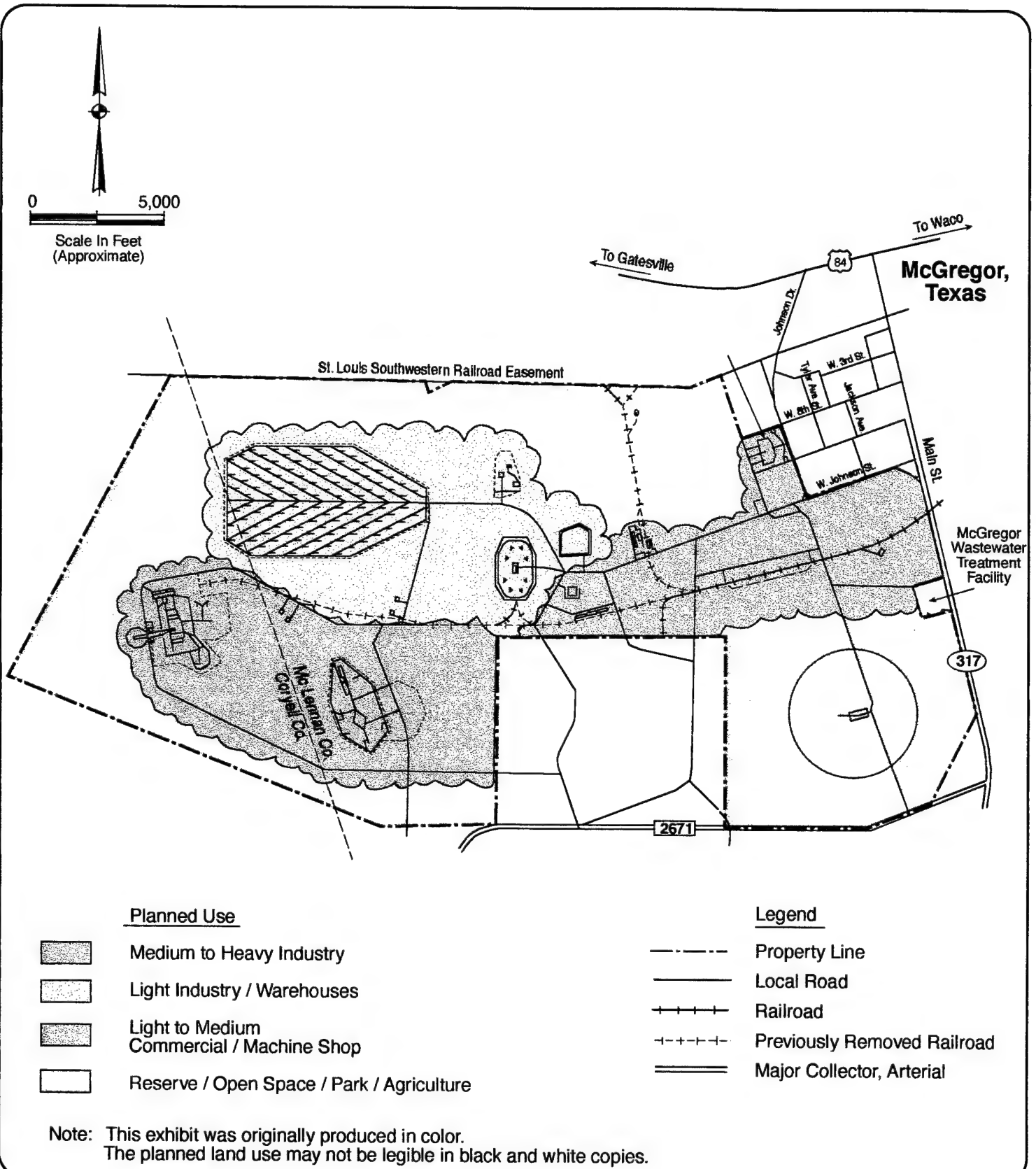
2.2.1 Reuse Scenario I - High Intensity

This reuse scenario (Figure 2-1), the City of McGregor's preferred reuse scenario, assumes a high intensity use of the existing facilities with the reuse being mainly a mixture of industrial and commercial activities. The typical example for the McGregor area would include administrative offices, warehousing, light to heavy industry, and commercial potentially developed in a piecemeal fashion. The existing water wells would be used by the City for municipal water supply. Land used for agriculture would be held in reserve or continue to be used for agriculture pending identification of future uses. Public parks and open spaces may be developed as indicated in Figure 2-1.

Buildings and facilities can be reused for the following purposes (Table 2-2):

- Administration, Offices
- Security, Public Safety (Police/Fire)
- Machine Shop, Vehicle Maintenance, or Other Light Industry or Medium Commercial
- Light to Medium Industry
- Storage/Warehouse
- Medium Industry
- Heavy Industry
- Reserve or Open Space/Park
- Held in Reserve, Agriculture

New development can occur in any location; however, the existing rail spur and better road conditions on the eastern side of the site would encourage initial development to locate in the east portion of the site. The rehabilitation of railroad tracks from existing Area E to existing Area M (Figure 1-2) could be required in order to provide rail service to industries that would need such service choosing to locate in the west portion of the site.



**Figure 2-1. Reuse Scenario I – High Intensity
(Typical Example – Mixed Use)**

Note: Multiply by 0.3048 to convert feet to meters.

TABLE 2-2 REUSE SCENARIO I - HIGH INTENSITY

<u>Reuse</u>	<u>Typical Building Area (approx. s.f.)</u>
Administration, Offices	60,330
Security/Public Safety (Police/Fire)	9,454
Machine Shop or other Light Industry or Medium Commercial	90,182
Vehicle Maintenance or other Light Industry or Medium Commercial	68,987
Water Utility	3,649
Light to Medium Industry	114,255
Storage/Warehouse	127,440
Medium Industry	23,542
Heavy Industry	302,993
Park (Public Golf Course)	*
Park (Recreational Area)	*
Agriculture	*

*These areas consists of up to a maximum of approximately 9,685 acres (3920 ha), based upon current agriculture lease agreements.

Note: To convert square feet to square meters divide by 10.764

Reuse of the site can be organized into several phases, based on the timing of released land and facilities. The phases are summarized as follows:

Phase 1 - East Sector

This area would be available for immediate reuse. Typical land use would be administrative offices, light industry, or medium commercial. Both water well sites (one in the east sector, another in the west sector) are included as public utility uses in this phase. Development by new tenants would be clustered along the existing rail spur extending approximately to Area E. The existing facilities can provide space for approximately 770 persons performing various activities.

Phase 2 - West Sector

The western sector area would be available for later reuse as land is remediated and released, and as rail lines are repaired/replaced or roads improved (as needed). As indicated in Figure 2-1, the western sector could be used for light to heavy industry, and warehousing. The existing facilities, depending on the tenant, can provide space for approximately 447 persons performing various activities.

Phase 3 - Agriculture/Reserve

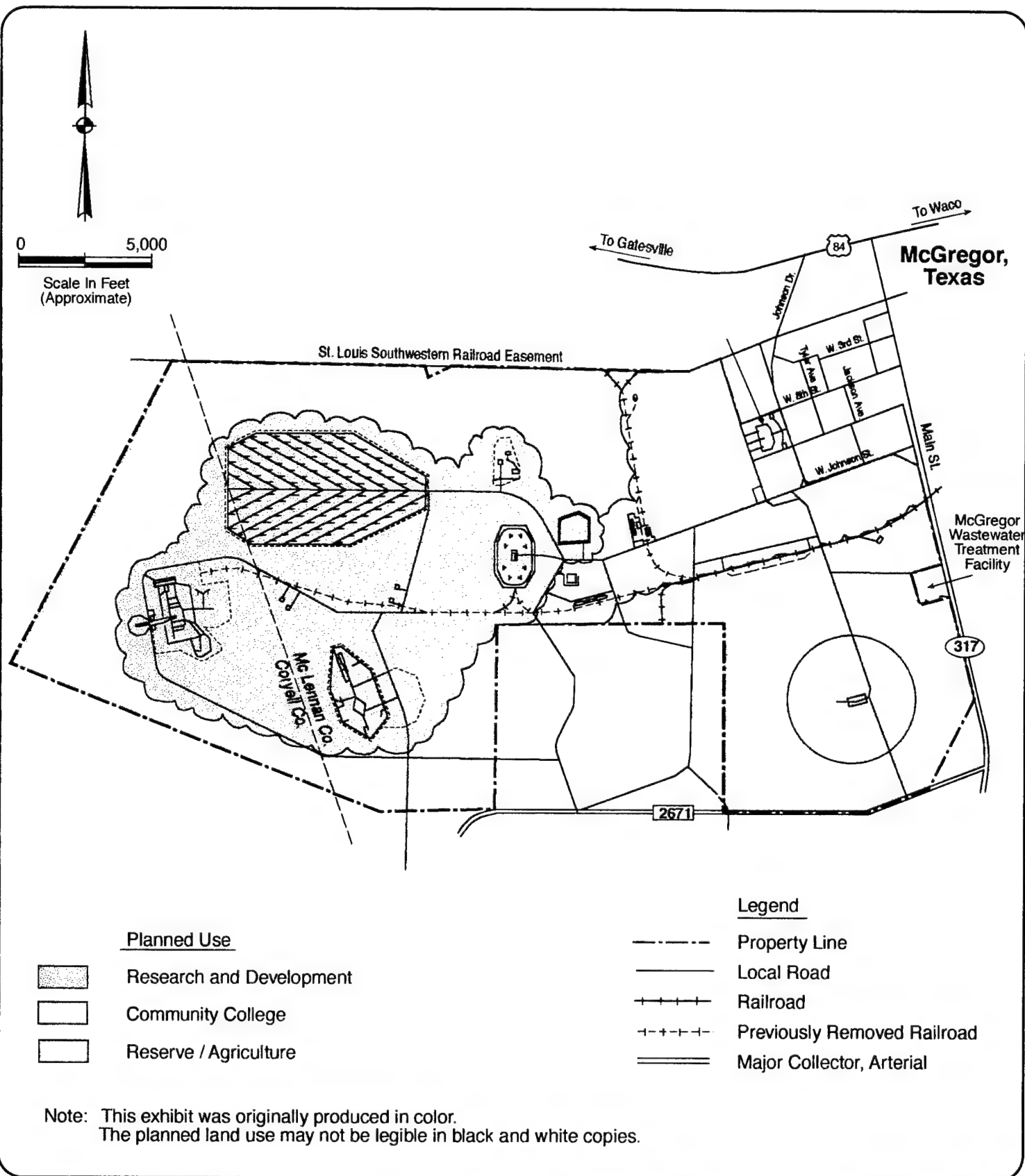
Phase 3, or interim use, would provide land for agricultural and reserve areas pending identification of future uses. Public parks may be developed in the southeastern and northeastern central areas. Approximately 50 personnel can be potentially employed in agriculture activities.

2.2.2 Reuse Scenario II - Medium Intensity

This reuse scenario assumes medium intensity usage for the facility with the typical example being educational reuse of the site (Community College/Research and Development [R&D]), as shown in Figure 2-2. Classroom, athletic, recreational, administrative, and support facilities for a community college would be located in the eastern portion of the site. Agriculture oriented research and development facilities, experimental farmland, and storage would be located in the western and other portions of the site. Existing water wells would be used by the City for municipal water supply.

Buildings and facilities can be reused for the following purposes (Table 2-3):

- Administration, Offices, Classrooms
- Security, Public Safety (Police/Fire)
- Machine Shop, Vehicle Maintenance, other Maintenance/Storage



Note: Multiply by 0.3048 to convert feet to meters.

TABLE 2-3 REUSE SCENARIO II - MEDIUM INTENSITY

<u>Reuse</u>	Typical Building <u>Area (approx. s.f.)</u>
Administration, Offices, Classrooms	60,330
Security/Public Safety (Police/Fire)	9,454
Machine Shop	90,182
Vehicle Maintenance, other Maintenance/Storage	68,987
Water Utility	3,649
R&D Labs, Processing Facilities	449,790
Storage/Warehouse/Archives	127,440
Agriculture Reserve	*
Athletic (Recreational Fields)	*
Agriculture	*

*These areas consists of up to a maximum of approximately 9,685 acres (3,920 ha), based upon current agriculture lease agreements.

Note: To convert square feet to square meters divide by 10.764

- Water Utility
- R&D Labs, Processing Facilities
- Storage/Warehouse/Archives
- Athletic, Recreational Fields
- Agriculture Reserve
- Held in Reserve, Agriculture

New classroom buildings and other facilities can be developed near the existing administrative facilities and north of the existing railroad. Reuse of the site can be organized into several phases, based on the timing of released land and facilities. The phases are summarized as follows:

Phase 1 - East Sector

The eastern sector can be immediately reused as a community college. This area contains administrative offices, classrooms, maintenance buildings, security buildings, and recreational/athletic areas. All water well sites in the east and west sectors are included as public utility uses in this phase. New classroom buildings and facilities can be developed, as needed, along the existing railroad. The existing facilities can provide space for approximately 300 students and 190 staff engaged in various activities.

Phase 2 - West Sector

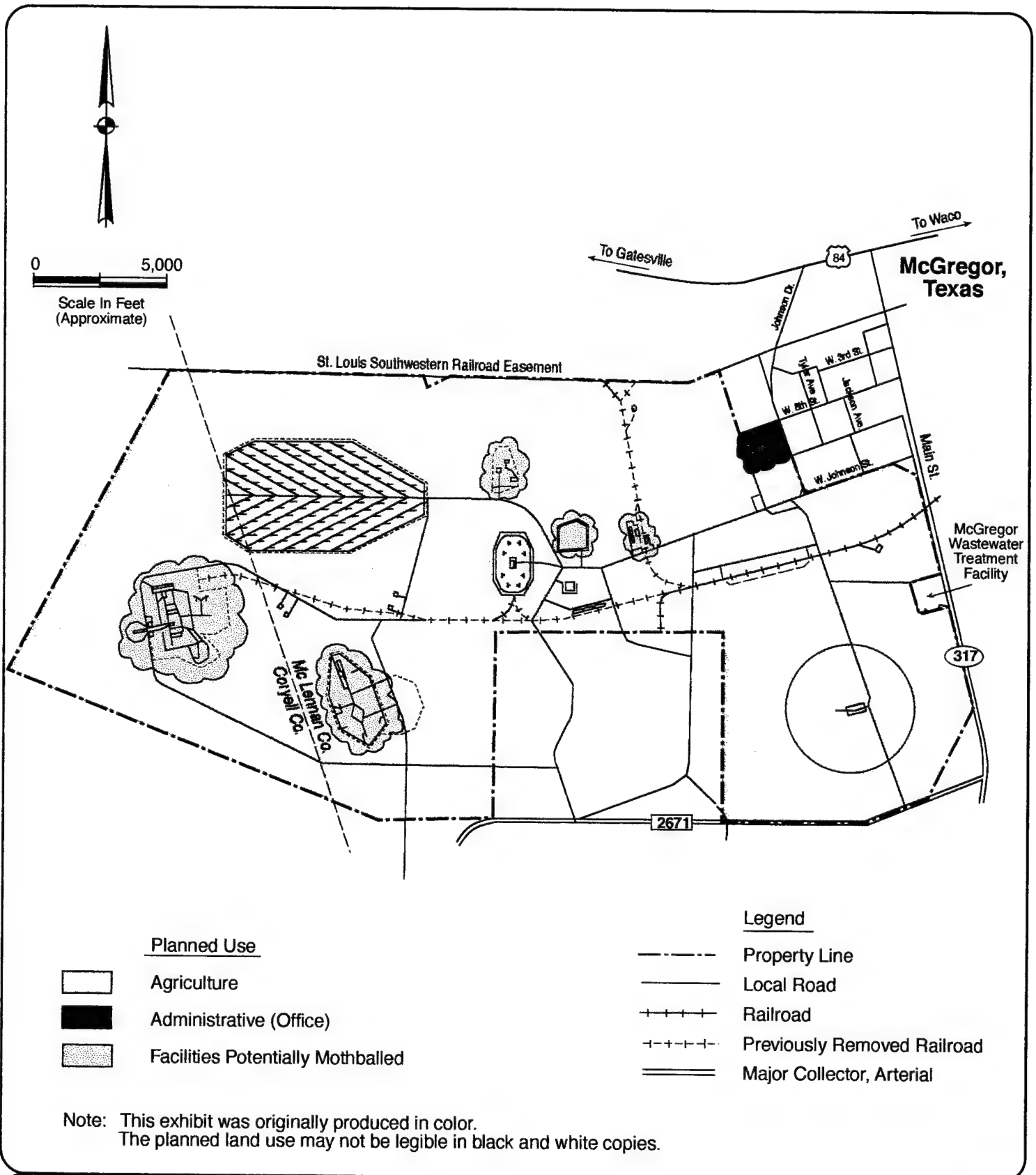
As land is remediated and released the western section can be developed for R&D laboratories, processing facilities, and warehousing and storage, as indicated in Figure 2-3. R&D activities can create as many as 45 jobs.

Phase 3 - Agriculture/Reserve

Phase 3 would provide land for agricultural cultivation and reserve areas. Agricultural activities can create as many as 50 jobs.

2.2.3 Reuse Scenario III - Low Intensity

This reuse scenario assumes low intensity usage with the typical example being agriculture/commercial use of the site as shown in Figure 2-3. All non-industrial areas may be immediately used for commercial farm purposes. Most of the industrial areas and facilities may not be needed and would remain in caretaker status (see discussion in Section 1.1.1). Other areas can be used as administrative and office resources, maintenance activities, agricultural processing, agriculture shop use (depending on adaptability from existing machine shop), and



**Figure 2-3. Reuse Scenario III – Low Intensity
(Typical Example – Commerical Agriculture)**

Note: Multiply by 0.3048 to convert feet to meters.

storage/warehousing. Existing water wells would be used by the City for municipal water supply. The existing rail spur could provide rail service up to existing Area E.

Buildings and facilities can be reused for the following purposes (Table 2-4):

- Administration, Offices
- Shop
- Maintenance and Agricultural Processing
- Agriculture
- Storage/Warehouse

Reuse of the property can be organized into two phases as follows:

Phase I - Non-Industrial Areas

Continuation of the on-going agricultural activities currently being conducted under existing/interim leases.

Phase II - Facilities Conversion

Conversion of selected existing buildings (Figure 2-3) for agricultural processing, shop use, maintenance, and administrative and office use. Areas not identified for agricultural use would remain in caretaker status.

The facility can be expected to provide space for as many as 58 persons employed in agricultural and related activities.

TABLE 2-4 REUSE SCENARIO III - LOW INTENSITY

<u>Reuse</u>	<u>Typical Building Area (approx. s.f.)</u>
Administration, Offices, Classrooms	60,330
Security/Public Safety (Fire)	9,454
Shop	90,182
Vehicle Maintenance or other Light Industry or Medium Commercial	68,987
Agriculture or Potential Areas Mothballed	449,790
Storage/Warehouse	127,440
Agriculture Fields	*

*This area consists of up to a maximum of approximately 9,685 acres (3,920 ha), based upon current agriculture lease agreements.

Note: To convert square feet to square meters divide by 10.764

3.0 AFFECTED ENVIRONMENT

This section describes the pre-closure conditions at NWIRP McGregor, the affected environment prior to the current interim caretaker/leasing status (see Sections 1.1.1 and 1.6), and the adjacent area prior to Hercules, Inc./Alliant Techsystems departure, unless otherwise noted. These pre-closure conditions serve as the baseline from which to identify and evaluate environmental consequences resulting from implementation of the proposed action. Resources evaluated are presented in three major categories which represent major environmental components of the area: physical, biological, and socioeconomic. A description of the plant and its facility inventory is presented first.

3.1 PHYSICAL RESOURCES

3.1.1 Facilities

The NWIRP McGregor facilities include approximately 240 buildings, approximately 60 mi (97 km) of roads (42 mi [68 km] improved) connecting the various activities onsite, rail lines, an onsite water plant and storage reservoirs, and other miscellaneous structures. In conjunction with the departure of Hercules, Inc./Alliant Techsystems from NWIRP McGregor, the Navy evaluated the condition of all structures, roads, and associated utilities. This evaluation consisted of an initial inspection to establish the pre-closure condition of all structures with emphasis on interior and exterior building integrity. As indicated in Section 2.2, only those buildings that have been identified in acceptable operating condition prior to securement or in a state of lay away that can be readily activated to operational conditions have been included as part of the indirect reuse impact assessment. Based upon inspections by Navy personnel, this includes the majority of the buildings located at the site, except for the 32 explosive magazines in Area H which are no longer functional due to previous structural damage (Figure 1-9), those buildings in Area G which were previously abandoned (Figure 1-8), and the Melt/Pour Building (no currently assigned building number) located in Area L (Figure 1-10) (U.S. Navy, 1995c & 1996d). The structural damage at the 32 explosive magazines in Area H has been cleaned-up such that only slabs and walls exist (U.S. Navy, 1998a).

Buildings

NWIRP McGregor has approximately 240 buildings containing approximately 850,000 square feet (79,000 sm) of floor space which include a variety of different structures such as administration offices, warehouses for general storage, hazardous flammable storehouses, high explosive magazines, propulsion systems laboratories, and utility buildings. All buildings identified to be in acceptable operating condition at the site, except Buildings 300, 506, 510, and 1610, have been preserved until a decision on disposal or retention of the property is reached. Building 300 is currently being used by the gate operator and as office space for the

Navy's contamination investigators. Buildings 506, 510, and 1610 are being used by the ordnance decontamination team from the Naval Ordnance Center, Indian Head, Maryland.

Table 3-1 presents a listing of the various buildings, pre-closure building identification, estimated square footage, and date of construction. A description of the facility layout and typical site photographs are contained in Section 1.0.

Facility Roadways

The main entrance to NWIRP McGregor, leading to the Administrative Area (Area A), is located off Johnson Drive (Figure 1-2). The main gate to the industrial areas of the plant is located in Area C, Industrial Security, which is accessed by West Johnson Street off of State Highway (SH) 317. Passes and vehicle decals were issued from the pass office located in Building 300 (Figure 1-4). Farm to Market (FM) 2671 runs along a major portion of the southern boundary. There are eight additional access gates located along the boundaries; however, these gates were not used for general access to the plant. In addition to the main gate house, located adjacent to Building 300, there were gate houses located at entrances to some of the various industrial areas.

There are approximately 60 mi (97 km) of roads connecting the various activities onsite. Approximately 42 mi (68 km) have been improved (paved) and have been maintained for industrial uses (deliveries to and from the plant, transportation between areas, etc.) (Alliant, 1995b). The paved roadways are wide, were constructed to handle heavy loads, and have been maintained beyond Texas Department of Transportation (TxDOT) standards to allow for the volume of heavy loads which were transported to and from the plant. Government maintenance on the roadways generally averaged from \$750,000 to \$1,000,000 annually. Expenditures on the most recent roadway maintenance projects were \$300,000 for 1992 and \$850,000 for 1993. Planned expenditures for 1994 were \$840,000; however, due to the plans to close the plant, not all of the \$840,000 budgeted for road maintenance was actually spent (Alliant, 1995c).

Railroads

Originally, there were 26 mi (42 km) of rail lines located at NWIRP McGregor; however, there has been a systematic removal of railroad track through the years associated with roadway improvements. The cross-ties to the tracks have been removed in most areas, but the rails and railroad beds are still in place. All of the rail lines to Area M, the rail line from the north, and trackage in the area of all roadway crossings have been removed (Figure 1-2). The rail line from the east remains in place, but it is in poor condition (Alliant, 1995b).

TABLE 3-1 NWIRP McGREGOR BUILDING INVENTORY

Operational Area	Building Number	Building Identification	Size (sq. ft.)	Year Built
A	100	Administration Office	51,400	1967
A	105	General Storage Shed	1,148	1942
A	106	Administration Office\Print Shop	7,782	1942
C	300	Industrial Security (Police\Fire\Gen. Inspection)	9,454	1942
D	402	Quality Assurance	10,608	1942
D	403	Machine Shop - Metals	33,124	1942
D	404	Q.A. Laboratory	10,208	1942
D	405	Tool builders	10,608	1942
D	410	General Warehouse\Bulk Storage	6,048	1942
D	418	General Storage Shed	480	1942
D	447	Maintenance Shop	12,736	1942
D	448	General Warehouse\Woodworking Shop	6,370	1942
E	506	Machine Shop	22,363	1942
E	507	Machine Shop	22,363	1942
E	508	Machine Shop	11,181	1942
E	510	Auto Vehicle Shop	10,200	1942
E	521	Flammable Storehouse	880	1952
E	526	Flammable Storehouse	1,000	1957
E	527	Flammable Storehouse	1,000	1957
F	601	General Storage Shed	795	1942
F	602	Administration Office	1,704	1942
F	603	Change\Boiler House	7,784	1942
F	604	Bulk Storage	7,656	1942
F	605	Propulsion Systems Laboratory	11,413	1942
F	606	Propulsion Systems Laboratory	12,284	1942
F	607	Propulsion Systems Laboratory	325	1942
F	608	Charging Station	696	1942
F	610	Propulsion Systems Laboratory	1,992	1942
F	611	Oxidizer Preparatory Propulsion Systems	3,660	1956
F	612	Equipment Support Building	1,742	1956
F	613	Equipment Support Building	2,886	1956
F	614	Materials Storage	2,840	1956
F	617	Propulsion Systems MFC	5,788	1956
F	618	Equipment Support Building	2,886	1956
F	620	Propulsion Systems Assembly	9,412	1956
F	621	Propulsion Systems Storage	2,775	1956
F	622	Propulsion Systems Storage	1,200	1956
F	623	Propulsion Systems Laboratory	144	1956
F	624	Materials Storage	414	1956
F	627	Propulsion Systems Storage	800	1956
F	629	Propulsion Systems Testing	1,240	1956

TABLE 3-1 NWIRP MCGREGOR BUILDING INVENTORY (Cont'd.)

Operational Area	Building Number	Building Identification	Size (sq. ft.)	Year Built
F	630	Propulsion Systems Storage	144	1956
F	633	General Warehouse\Bulk Storage	800	1956
F	635	(Warehouse) Storage	1,056	1956
G	704	General Warehouse\Bulk Storage	7,038	1942
G	705	General Warehouse\Bulk	33,744	1942
G	711	Ammunition, Explosives\Toxic	4,200	1942
G	720	General Storage Shed	304	1942
H	8001- 8118	High Explosive Magazine	1,080	1942
L	1102	Propulsion Systems Testing	4,480	1942
L	1105	Electrical\Electronic Systems\Admin.	8,960	1942
L	1111	Firing Control - Testing	225	1955
L	1117	General Warehouse\Bulk Storage	6,912	1942
L	1140	Large Motor Missile Test Facility	2,965	1963
L	1149	Propulsion Testing	0	1955
M	1201	Administration Office	23,288	1944
M	1203	Administration Office	3,428	1944
M	1204	Heat Plant Building	5,092	1944
M	1205	Propulsion Systems MFC\Warehouse	66,220	1944
M	1206	Propellant\Chemical Plant	16,770	1944
M	1209	Production Storage/Igniter Assembly	23,680	1944
M	1210	Propellant\Chemical Plant	4,650	1944
M	1214	Propellant\Chemical Plant	1,040	1963
M	1217	Propellant\Chemical Plant	29,805	1956
M	1218	Propellant\Chemical Plant	2,818	1956
M	1219	Propellant\Chemical Plant	37,546	1944
M	1223	Hazardous Flammable Storehouse	400	1944
M	1224	Propellant\Chemical Plant	28,269	1956
M	1226	Propellant\Chemical Plant	13,248	1944
M	1227	Propellant\Chemical Plant	27,102	1956
M	1228	X-Ray Lab	3,444	1963
M	1229	Propellant\Chemical Plant Mixer Bldg.	1,414	1956
M	1230	Propellant\Chemical Plant Mixer Bldg.	1,320	1956
M	1231	Mixer Control Bldg.	500	1956
M	1232	Propellant\Chemical Plant	2,600	1963
M	1233	Propellant\Chemical Plant	2,600	1963
M	1236	Propellant\Chemical Plant	1,200	1956
M	1237	Propellant\Chemical Plant	1,647	1944
M	1238	High Explosive Magazine Storage	1,647	1944
M	1239	High Explosive Magazine Storage	1,647	1944
M	1240	High Explosive Magazine Storage	1,618	1944
R	1601	Propulsion Systems Laboratory	19,930	1956

TABLE 3-1 NWIRP McGREGOR BUILDING INVENTORY (Cont'd.)

<u>Operational Area</u>	<u>Building Number</u>	<u>Building Identification</u>	<u>Size (sq. ft.)</u>	<u>Year Built</u>
R	1602	Propulsion Systems Laboratory	3,233	1956
R	1603	Administration Office	2,592	1956
R	1605	Propulsion Systems Temp. Conditioning	3,456	1956
R	1608	General Warehouse\Bulk Storage	960	1959
R	1609	Vibrator Test Equipment Laboratory	1,008	1964
R	1610	Shock Test Missile Equipment Laboratory	640	1964
T	1801	General Warehouse\Bulk Storage	2,500	1960
T	1802	General Warehouse\Bulk Storage	3,040	1960
Z	2301	Water Treatment Facility\Well	308	1942
Z	2302	Water Treatment Facility\Well	308	1942
Z	2303	Water Treatment Facility Building	308	1942
Z	2304	Water Treatment Facility\Well	308	1942
Z	2306	Ground Storage Tank		1942
Z	2307	Ground Storage Water Reservoir		1942
Z	2308	Pump House	1,481	1942
Z	2309	Pump House	936	1942
Z	2310	Elevated Storage Tank		1956
Z	2311	Elevated Storage Tank		1955
Z	2351	Well\Reservoir Potable		1942
Z	2352	Well\Reservoir Potable		1942
Z	2354	Well\Reservoir Potable		1942
	4	Gate\Sentury House	70	1954
	5	Gate\Sentury House	32	1982
	6	Main Gate Guard House	32	1982
	12	General Storage Shed	56	1958
	18	Recreation Pavillion	18	1956
	46	Recreation Pavillion	60	1958

Note: To convert square feet to square meters divide by 10.764

Source: U.S. Navy, 1994.

Water Supply Systems

NWIRP McGregor has three operating groundwater wells which have pumping capacities of 267 gallons per minute (gpm) (1,011 liters per minute), 235 gpm (890 liters per minute), and 350 gpm (1,325 liters per minute) (Alliant, 1995c). Five wells were originally located at the plant; however, because of age and sand infiltration new wells were drilled at the three best producing locations only. The five original wells were plugged consistent with state regulations. Figure 3-1 presents the location of the three current groundwater wells (Numbers 1, 2, and 4). The numbering system reflects the numbering of the original wells. Well locations 3 and 5 were not re-drilled and, thus, those well numbers are no longer used (Alliant, 1995b). During the 1994 calendar year, the three operating wells supplied approximately 112.0 million gallons (424 million liters) (306,929 gpd [1.16 million liters per day]) of water. Of this supply, approximately 16.6 million gallons (62.8 million liters) were sold to the City of McGregor and 188,000 gallons (712,000 liters) to adjacent land owners (Hercules, 1994). This resulted in approximately 95.3 million gallons (360.7 million liters) being used at the plant and represented an average daily use of approximately 261,050 gpd (988,150 liters per day). This water was used for cooling, condensing, refrigeration, process and washdown, boiler feed, air conditioning, sanitary and drinking water.

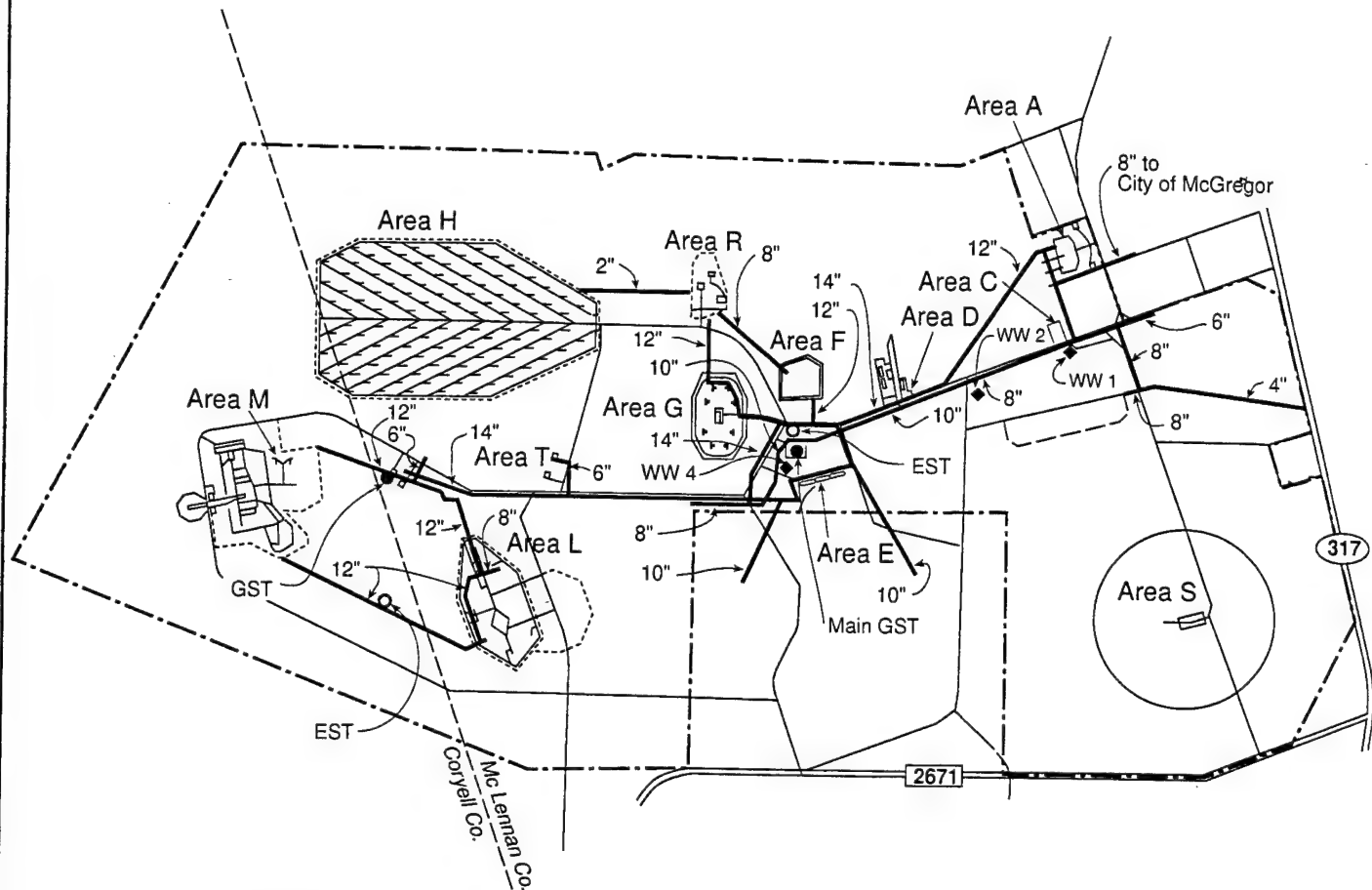
There are five water treatment facilities within NWIRP McGregor, one located at each operating well and one each at the two groundwater storage tanks. These treatment facilities, which use chlorine gas, are capable of treating quantities consistent with the pumping rates and to facility demand (Alliant, 1995d).

NWIRP McGregor has potable water storage capacity of 1.2 million gallons (4.5 million liters). This consists of two, 200-foot (61 meter [m]) towers with 100,000 gallons (378,530 liters) storage each and two groundwater storage tanks with a total capacity of 1.0 million gallons (3.8 million liters) (one above ground tank with 100,000 gallons (378,530 liters) capacity and one below-ground tank with 900,000 gallons [3.4 million liters] capacity). Potable water is distributed through 34,100 feet (10,400 m) of waterlines (Figure 3-1).

During the interim caretaker status, water usage to the buildings located on-site has been reduced to minimal levels; however, water continues to be provided to the agricultural lessees. During an average month this would be approximately 100,000 gallons (378,530 liters) and approximately 250,000 gallons (946,325 liters) per month during the summer (U.S. Navy, 1998c).

Wastewater Treatment

Much of the wastewater produced at NWIRP McGregor, except for Areas E, L, M, T, and portions of G, was treated at the City of McGregor Sewer Plant. The wastewater collection system discharges into the City of McGregor's system, presented in Figure 3-2. The City's



Legend

Area A	Administration
Area C	Industrial Security
Area D	Machine Shop & Tool Fabrication
Area E	Vehicle Maintenance
Area F	Research and Development Laboratories
Area G	Warehousing
Area H	Explosive Magazine Storage
Area L	Test Instrumentation Laboratory Static Test Area
Area M	Propellant Manufacturing Plant
Area R	Environmental Testing Static Test Area
Area S	Explosives Classification and Disposal
Area T	Crating & Shipping

---	Property Line
==	Facility Road
---	Water Line
■	Water Well (WW)
●	Ground Storage Tank (GST)
○	Elevated Storage Tank (EST)

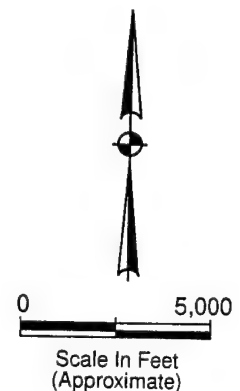
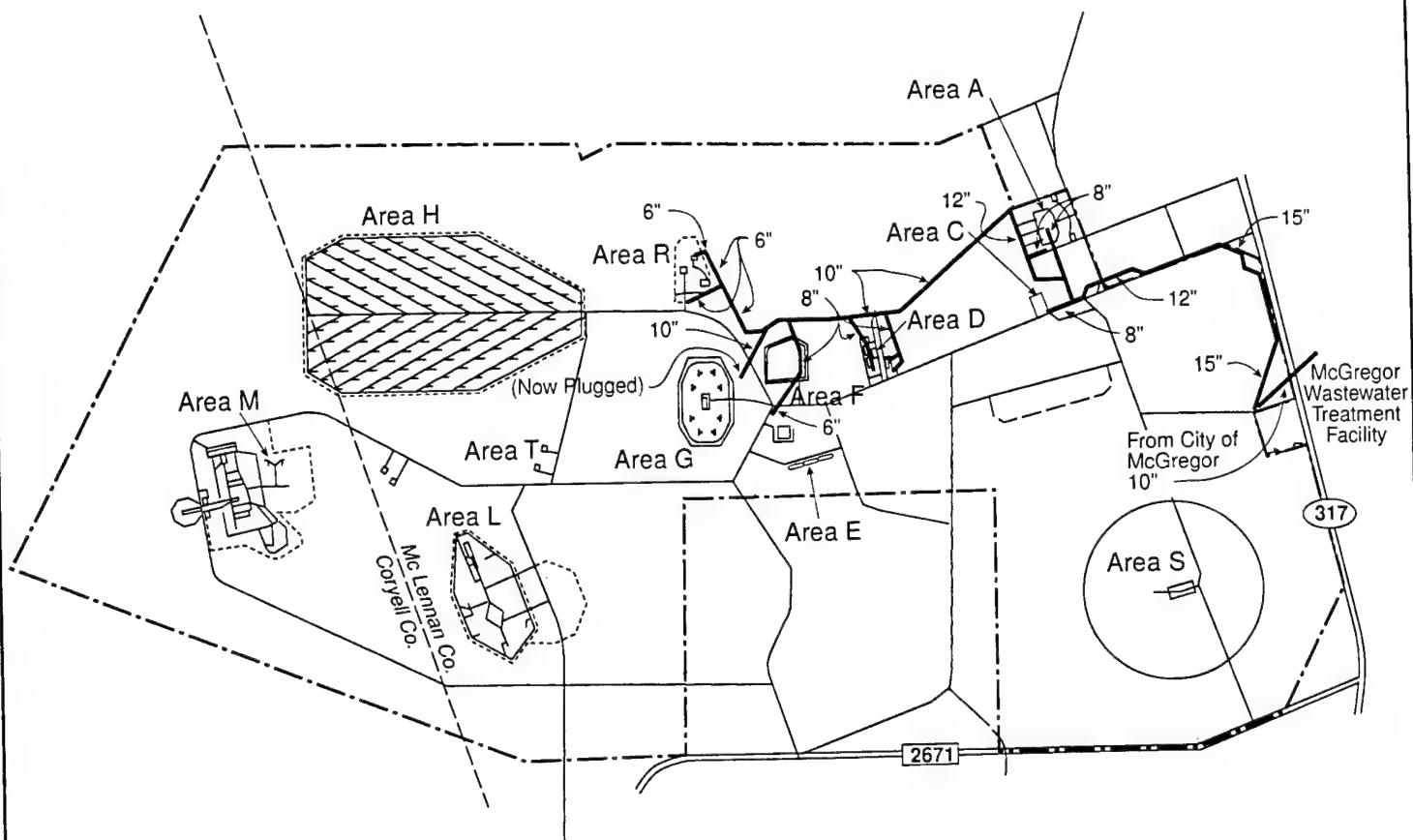


Figure 3-1. Water System (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.



Legend

Area A	Administration
Area C	Industrial Security
Area D	Machine Shop & Tool Fabrication
Area E	Vehicle Maintenance
Area F	Research and Development Laboratories
Area G	Warehousing
Area H	Explosive Magazine Storage
Area L	Test Instrumentation Laboratory Static Test Area
Area M	Propellant Manufacturing Plant
Area R	Environmental Testing Static Test Area
Area S	Explosives Classification and Disposal
Area T	Crating & Shipping

—	Sewage Line (Vitrified Clay Pipe)
- - -	Property Line
—	Facility Road

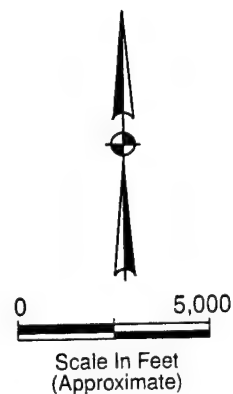


Figure 3-2. Sewage Collection System (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.

plant has the capacity to treat 1.1 million gallons per day (mgd) (4.2 million liters per day) with an estimated average treatment requirement of about 0.5 mgd (1.9 million liters per day). About 70,000 to 75,000 gpd (265,000 to 284,000 liters per day) were indicated to be from the NWIRP McGregor (City of McGregor, 1995a).

Area M is serviced by a sewer and septic system which discharges to an Imhoff tank located south of Area M (Figure 3-3). The Imhoff tank is a below ground 6,565-gallon (24,851-liter) concrete tank used as a settling basin. From the Imhoff tank, flow was discharged to three spreading ponds where the discharge was monitored and chlorine added before release to a tributary of Station Creek (Alliant, 1995c). The wastewater from Area M consisted of domestic sewage, boiler blowdown, cooling water, rinse water, stormwater, and treatment process water originating from the X-ray processing area. NWIRP McGregor was issued a National Pollutant Discharge Elimination System (NPDES) permit for discharge from this area (see Water Quality discussion).

Septic tank systems/leach fields were installed in Areas E, L, T, and some buildings in Area G. Sewer lines leading from Area G had been previously plugged.

The total wastewater collection system at NWIRP McGregor consists of 75,350 feet (22,970 m) of sewer lines. This includes both the system discharging to the City's treatment facility (Figure 3-2) and the Area M system (Figure 3-3).

Electrical Systems

NWIRP McGregor is supplied electricity from a Texas Utilities (TU) Electric owned metering and switching station located at the eastern boundary of the facility near the City of McGregor's Wastewater Treatment Facility (Figure 3-4). A 69 KV transmission line from this station supplies power to the plant's main 500 KV substation located south of Area H. From this substation, four 12.5 KV feeder lines supply power to the various facility areas. The distribution system owned by the facility consists of 137,280 feet (41,840 m) of transmission and feeder lines.

During 1994, TU Electric supplied 31,208,940 kilowatt hours (KWH) of electricity to NWIRP McGregor. This represented an average of 85,084 KWH/day. Peak usage during 1994 occurred in August when 97,130 KWH/day were used (Alliant, 1995c). Electric usage has been reduced to minimal levels as part of the interim caretaker status (U.S. Navy, 1998a).

Natural Gas Systems

Lone Star Gas (LSG) Company provides natural gas service to NWIRP McGregor and the surrounding area. The company currently supplies approximately three million cubic feet (MCF) (84,960 cubic meters [m³]) of gas per day to the region (LSG, 1995). During 1994,

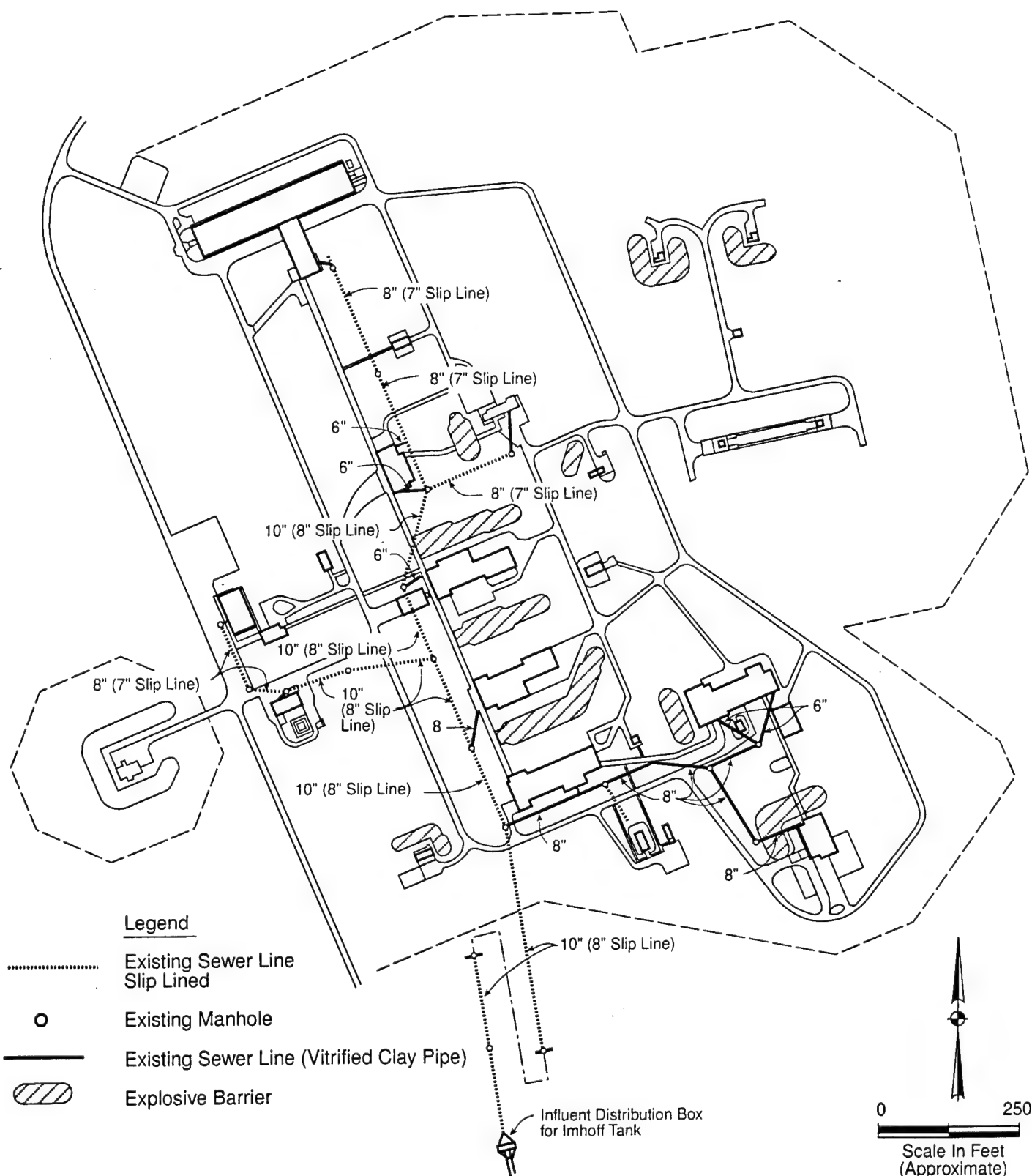
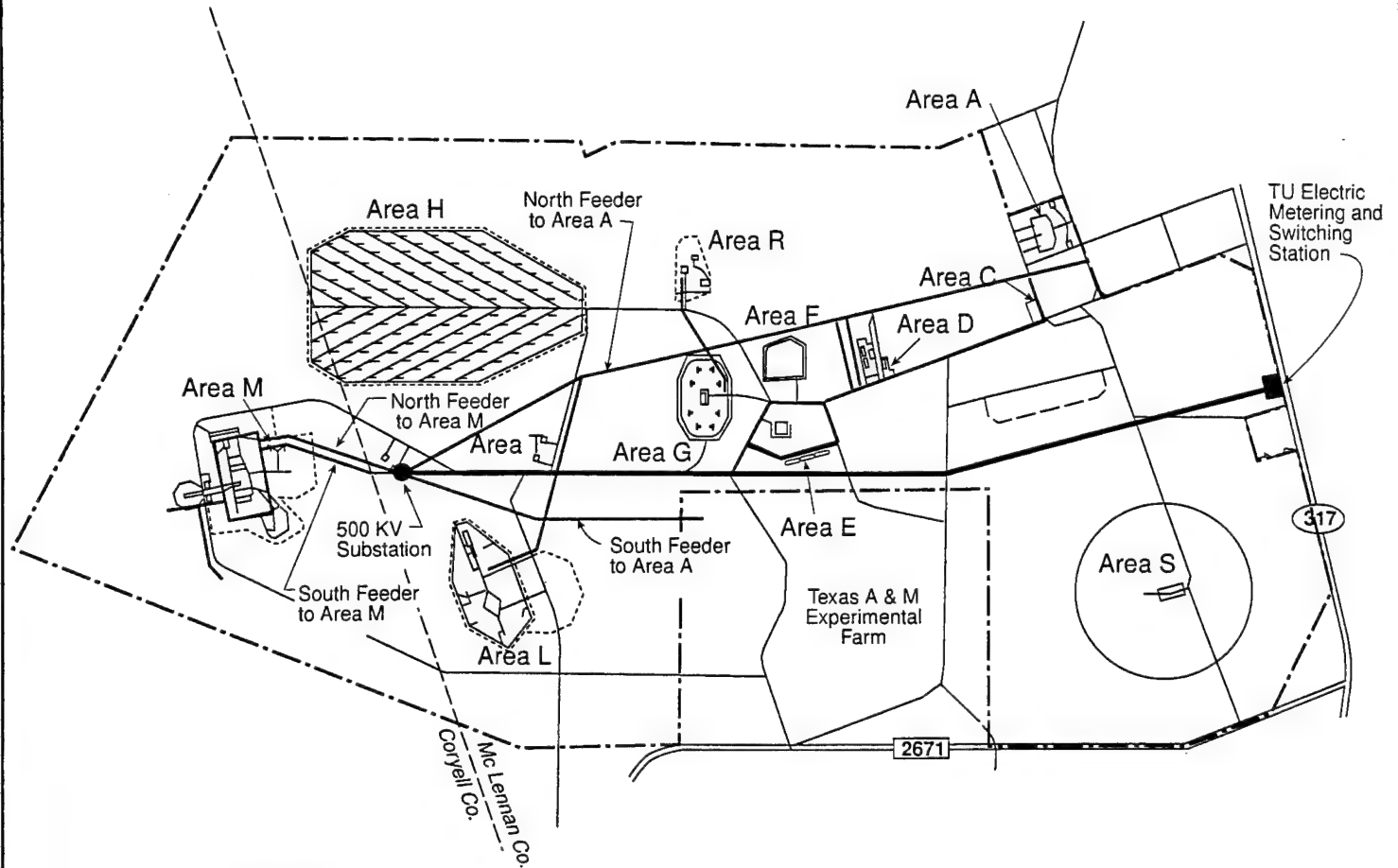


Figure 3-3. Sewer System – Area M (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.



Legend

Area A	Administration
Area C	Industrial Security
Area D	Machine Shop & Tool Fabrication
Area E	Vehicle Maintenance
Area F	Research and Development Laboratories
Area G	Warehousing
Area H	Explosive Magazine Storage
Area L	Test Instrumentation Laboratory Static Test Area
Area M	Propellant Manufacturing Plant
Area R	Environmental Testing Static Test Area
Area S	Explosives Classification and Disposal
Area T	Crating & Shipping

	Main Transmission Line (69KV)
	Feeder Line (12.5 KV)
	Property Line
	Facility Road

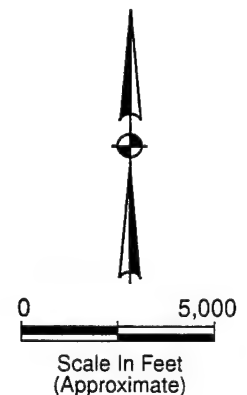


Figure 3-4. Electrical Distribution System (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.

188,751 MCF (5,345 million m³) of natural gas were supplied to NWIRP McGregor with an average use of 519.1 MCF/day (14.7 million m³/day). The peak demand occurred in January when the plant used 677.7 MCF/day (Alliant, 1995c). Natural gas usage has been reduced to minimal levels as part of the interim caretaker status (U.S. Navy, 1998a).

A 10-inch (in) (25 centimeter [cm]) gas pipeline feeds natural gas to a metering station located near Area E (Figure 3-5). This pipeline has a pressure range of 125 to 160 pounds per square inch gauge (psig) (862 to 1,103 kilopascal [kPa]) to the metering station. Natural gas is then distributed to the plant areas through a system of distribution lines varying in size from 8 to 2 in (20 to 5 cm). The total system consists of 34,100 feet (10,400 m) of lines. In addition to the 10-in (25 cm) gas pipeline feeding the plant, an 8-in (20 cm) transmission line, owned by LSG, also transects the facility. This transmission line supplies natural gas to Fort Hood and the City of Crawford (LSG, 1995).

Heat System

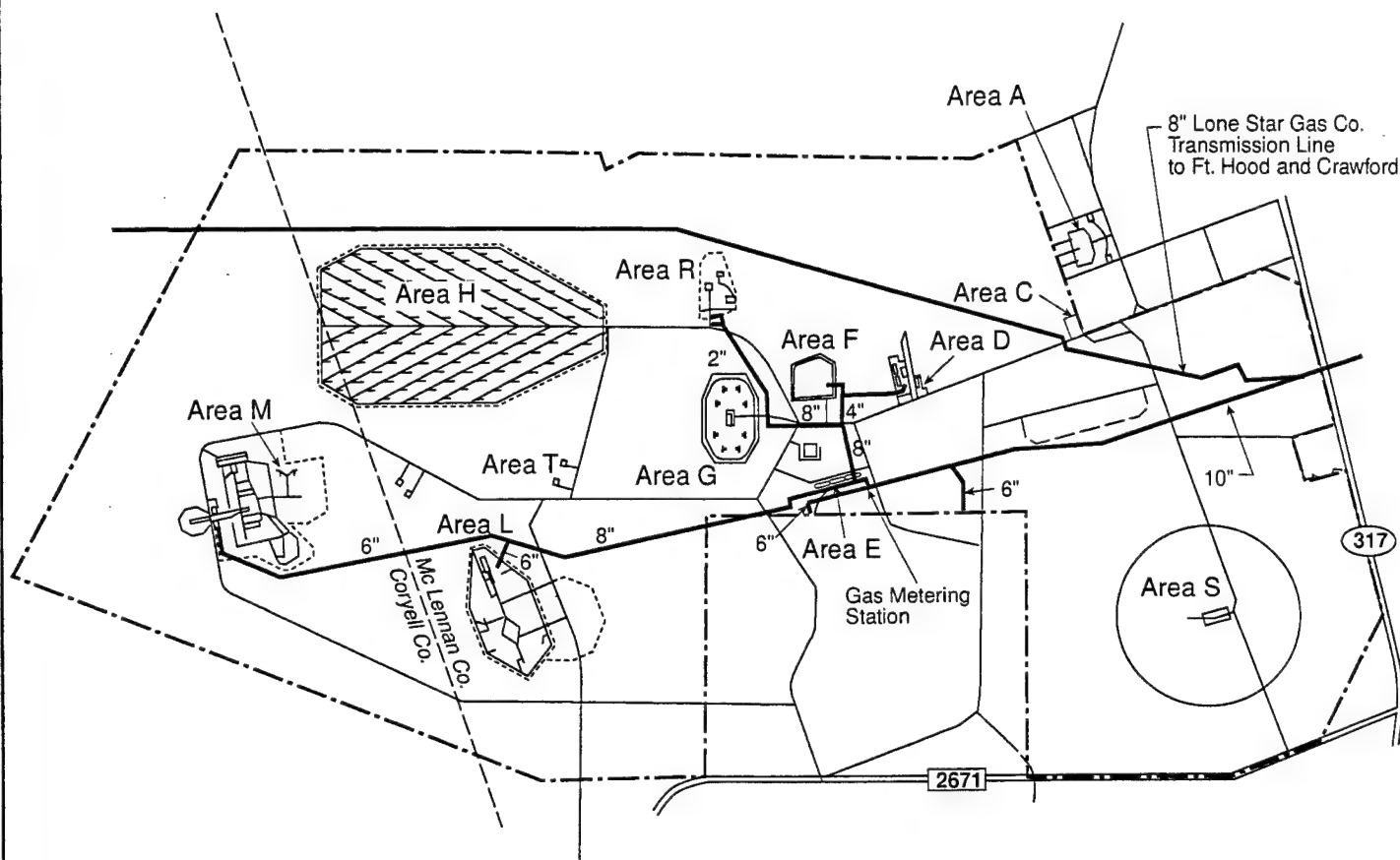
NWIRP McGregor contains two heat plants located in Buildings 603 and 1204. Building 603 contains two boilers, each capable of producing 30,000 pounds (lbs) (13,600 kilograms [kg]) of steam per hour; Building 1204 contains three boilers, each capable of producing 20,000 lbs (9,100 kg) of steam per hour. Steam is provided to the various areas through 76,978 feet (23,463 m) of transmission lines (Alliant, 1995b). Heat plant usage has been reduced to minimal levels as part of the interim caretaker status (U.S. Navy, 1998a).

Communications System

All internal communication equipment and wiring has been removed from the NWIRP McGregor buildings. However, the main Southwestern Bell trunk lines remain, which include the fiber-optics cable to Building 100 (Alliant, 1995b).

Solid Waste Management

Non-hazardous waste from NWIRP McGregor is collected by Centex Waste Management, Inc. At one time, there were 50 solid waste collection bins located at the facility; however, before Hercules/Alliant vacated the facility the number of collection bins ranged between 20 and 35 (Alliant, 1995b). From August 3, 1995 to March 1, 1996, NWIRP McGregor generated approximately 1,450 cubic yards (1,110 m³), or 414 tons (376 metric tons), of non-hazardous solid waste resulting in an average of approximately two tons (1.8 metric tons) per day (Centex Waste Management, 1996). Final destination for non-hazardous solid waste generated at NWIRP McGregor is the Lacy-Lakeview Landfill near Moody, Texas. The Lacy-Lakeview landfill is a 99-ac (40 ha) permitted facility with a current capacity of 62 ac (25 ha). Currently, the landfill accepts a total of approximately 2,400 cubic yards (1,800 m³), or 685 tons (621 metric tons), of non-hazardous solid waste per day. The remaining life of the landfill is 20



Legend

Area A	Administration
Area C	Industrial Security
Area D	Machine Shop & Tool Fabrication
Area E	Vehicle Maintenance
Area F	Research and Development Laboratories
Area G	Warehousing
Area H	Explosive Magazine Storage
Area L	Test Instrumentation Laboratory Static Test Area
Area M	Propellant Manufacturing Plant
Area R	Environmental Testing Static Test Area
Area S	Explosives Classification and Disposal
Area T	Crating & Shipping

-----	Property Line
=====	Facility Road
=====	Natural Gas Line

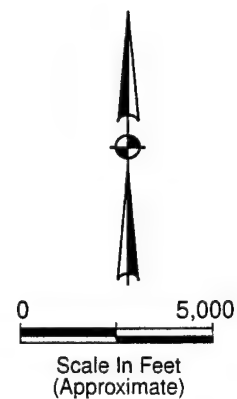


Figure 3-5. Natural Gas Distribution System (Alliant, 1995a)

Note: Multiply by 0.3048 to convert feet to meters.

years; however, a planned expansion would extend the life of the landfill an additional 17 years (Lacy-Lakeview Landfill [LLL], 1996). Generation of solid waste has been reduced to minimal levels as part of the interim caretaker status (U.S. Navy, 1998a).

3.1.2 Earth Resources

Topography

The project area lies between the Coastal Plain and the North Central Plains physiographic provinces. The boundary between these two provinces is generally the trace of the Balcones fault zone (Quachita tectonic front) which extends north-south through central Bell, McLennan, and Hill counties, immediately north of NWIRP McGregor. The Balcones fault zone is marked by a line of low hills rising approximately 150 feet (46 m) above the surrounding, more gently rolling plains (Figure 3-6). The land area of NWIRP McGregor is mostly level to gently rolling (U.S. Navy, 1996a). The headwaters of the south branch of the Bosque River trends northward near the south central portion of the plant and then flows eastward. The extreme northern portion of the plant slopes in the direction of Harris Creek, a tributary of the Middle Branch of the Bosque River. The extreme western portion of the area slopes in the direction of the Leon River (U.S. Navy, 1996a).

Geology

NWIRP McGregor is located in the central Texas section of the Brazos River Basin (Texas Water Commission [TWC], 1974). Most of the region is underlain by Lower Cretaceous age rocks consisting of sandstone, conglomerate, shale and limestone (Figure 3-7). This part of the Brazos River Basin is bounded on the east by the Balcones fault zone which separates it from the western extension of the Texas Gulf Coastal Basin (Figure 3-8). Lower Cretaceous rocks in north-central Texas were deposited in an area with two juxtaposed structural provinces, the East Texas basin and the Texas craton (Bureau of Economic Geology, 1976). The East Texas basin was an area of active subsidence and the Texas craton was a relatively stable structural platform. The boundary between these two distinct structural provinces is marked by the Paleozoic rocks of the Quachita tectonic belt and in the Cretaceous section by the Balcones and Mexia-Luling fault zones (Figure 3-8). The Balcones fault zone consists of numerous normal faults that dip to the southeast along which the Cretaceous rocks have been downfaulted, the displacement being about 400 feet (122 m) in northern McLennan County (TWC, 1974). NWIRP McGregor is located at the western edge of the Quachita tectonic front.

NWIRP McGregor is underlain by a transgressive-regressive sequence of Cretaceous age sedimentary rocks consisting primarily of limestones and shales. A full Cretaceous sedimentary sequence appears to be present in the area (U.S. Navy, 1996c). This sequence of rocks is uplifted slightly exposing the Georgetown Formation. The members of the Georgetown Formation that are exposed at the surface in the vicinity of NWIRP McGregor are

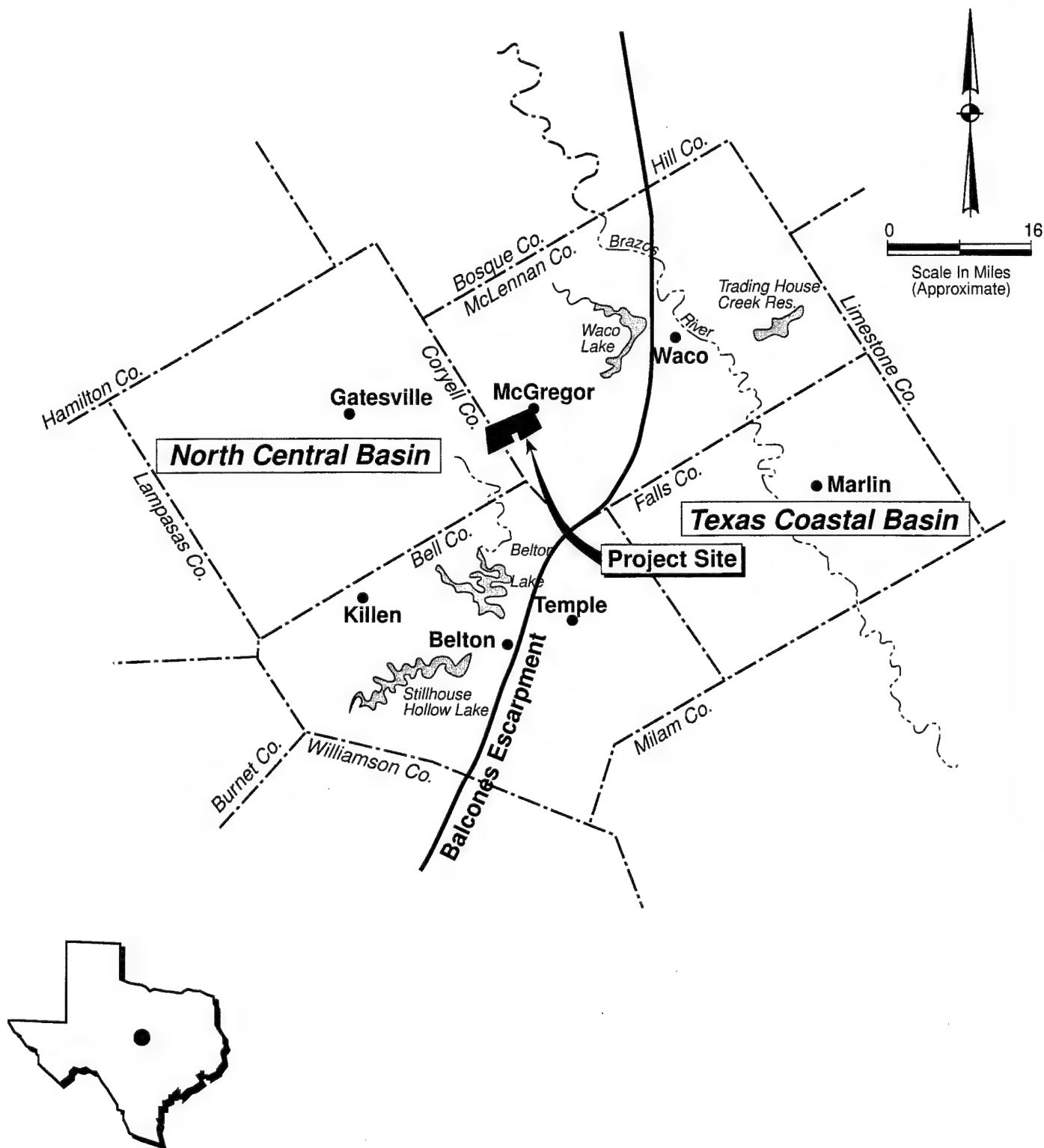


Figure 3-6. Physiographic Provinces (USGS, 1976)

Note: Multiply by 1.60935 to convert miles to kilometers.

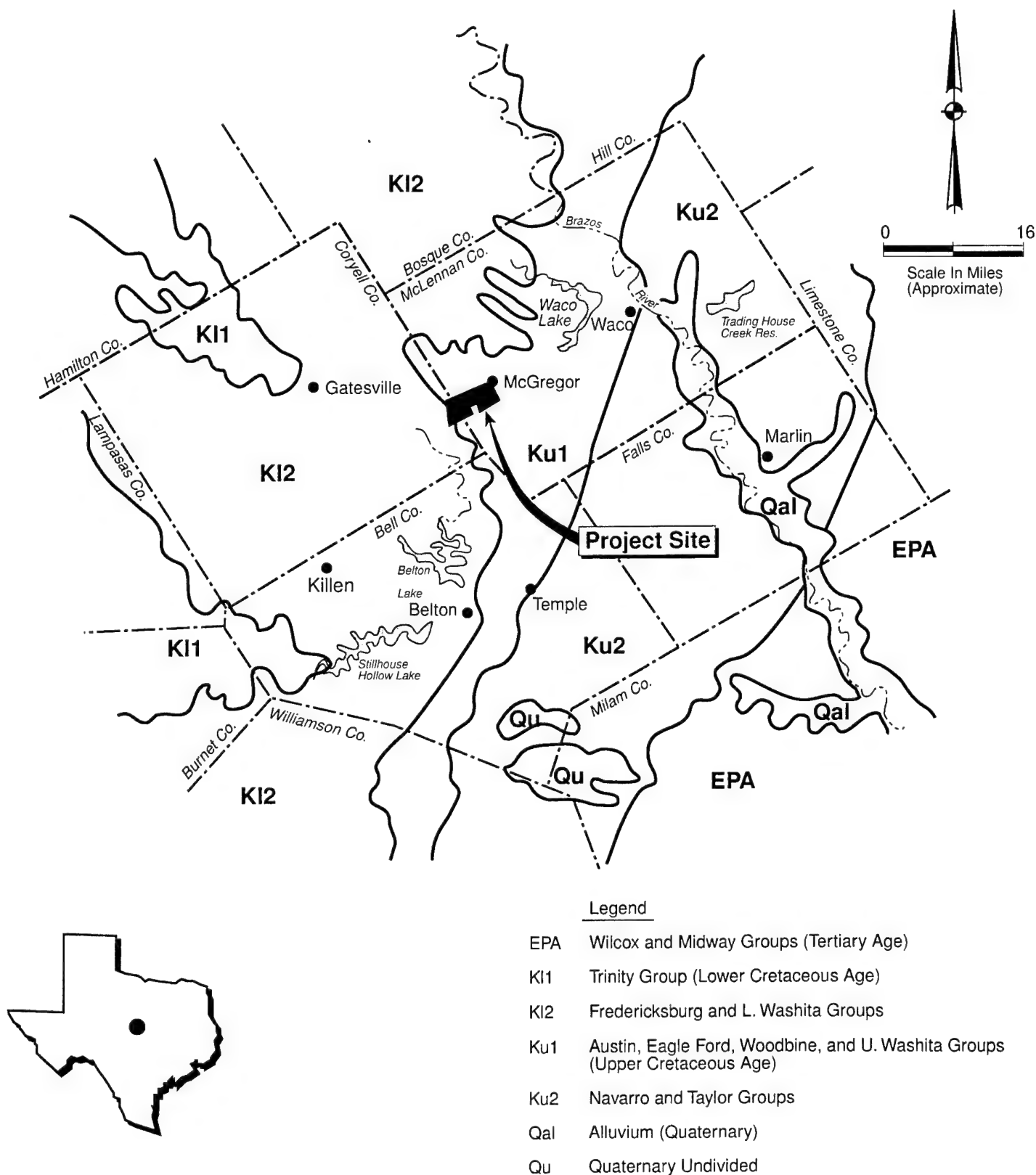


Figure 3-7. Geologic Formations (Bureau of Economic Geology, 1992)

Note: Multiply by 1.60935 to convert miles to kilometers.

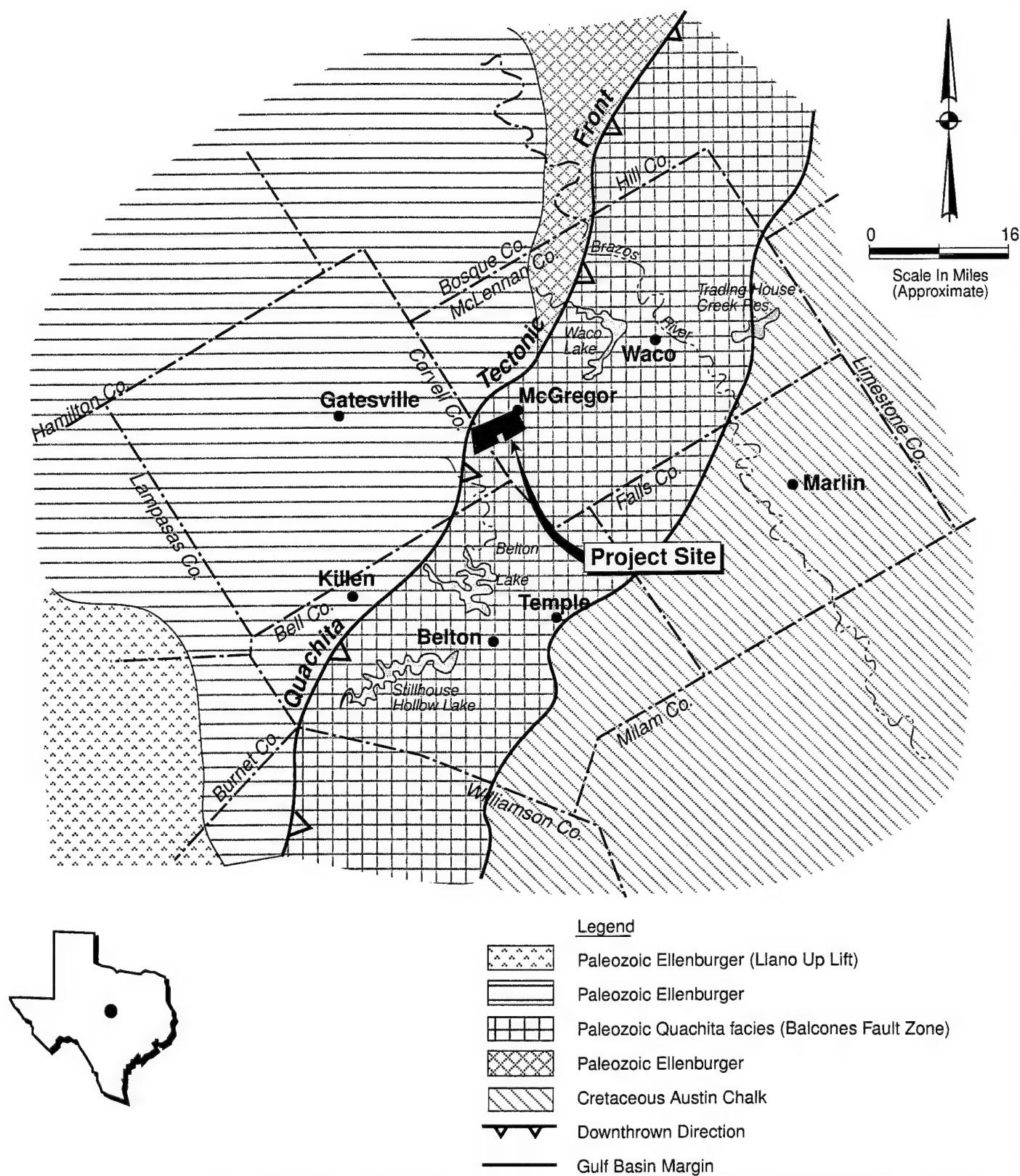


Figure 3-8. Tectonic Map (Bureau of Economic Geology, 1994)

Note: Multiply by 1.60935 to convert miles to kilometers.

the Denton Marl, Weno Limestone, Pawpaw Shale, and the Main Street Limestone (Bureau of Economic Geology, 1976).

Mineral resources in the NWIRP McGregor area include limestone, oil, gas, chalk, and sand and gravel deposits (Figure 3-9). Minerals produced in Coryell County in 1986 included sand and gravel. McLennan County produced cement, sand and gravel and clay (Bureau of Economic Geology, 1989). A few oil and gas wells have been drilled in the McGregor area and the South Bosque Oil Field is located near the south end of Lake Waco. The potential for conventional oil and gas occurrence near NWIRP McGregor is ranked as high (U.S. Department of the Interior, Bureau of Land Management, 1996), although the oil and gas proved reserves potential is ranked as low, in McLennan County, to none, in Coryell County.

Soils

The Natural Resource Conservation Service (NRCS), formerly known as the Soil Conservation Service (SCS), has identified eight different soils at NWIRP McGregor. These soils are the Crawford clay, Slidell clay, Purves clay, Denton silty clay, Bolar gravelly clay loam, Aledo gravelly clay loam, Frio silty clay, and San Saba clay. Figure 3-10 illustrates the locations of the various soils at the NWIRP McGregor site.

The dominant soil series at NWIRP McGregor are the Crawford clays (referred to as Crawford silty clay in Coryell County and Crawford clay in McLennan county). This series covers about one-third of the plant property and is predominantly found on the western and central portions of the property. The soil is well drained, and permeability is very slow when the soil is saturated and rapid when it is dry and cracked. Available water capacity is low, runoff is slow, and hazard for erosion is moderate. Crawford clay is well suited to uses as cropland and pasture (SCS, 1985a).

The second most common soil series are the Slidell clays (referred to as Slidell silty clay in Coryell County and Slidell clay in McLennan County) and are located throughout the plant property. This soil is well drained, permeability is very slow, and available water capacity is high. Surface runoff is slow to medium, and hazard for erosion is moderate. This soil is well suited to uses as cropland and pasture (SCS, 1985a).

The Purves clays (referred to as Purves gravelly silty clay in Coryell County and Purves clay in McLennan county) are the third most common soil series and are primarily located on the eastern portions of the plant property. The soil is well drained, permeability is moderately slow, and available water capacity is very low. Surface runoff is slow to medium, and the hazard for erosion is moderate. It is poorly suited to use as cropland, due to depth to rock, surface stones, and low available water capacity, and is moderately suited for use as pasture (SCS, 1985a).

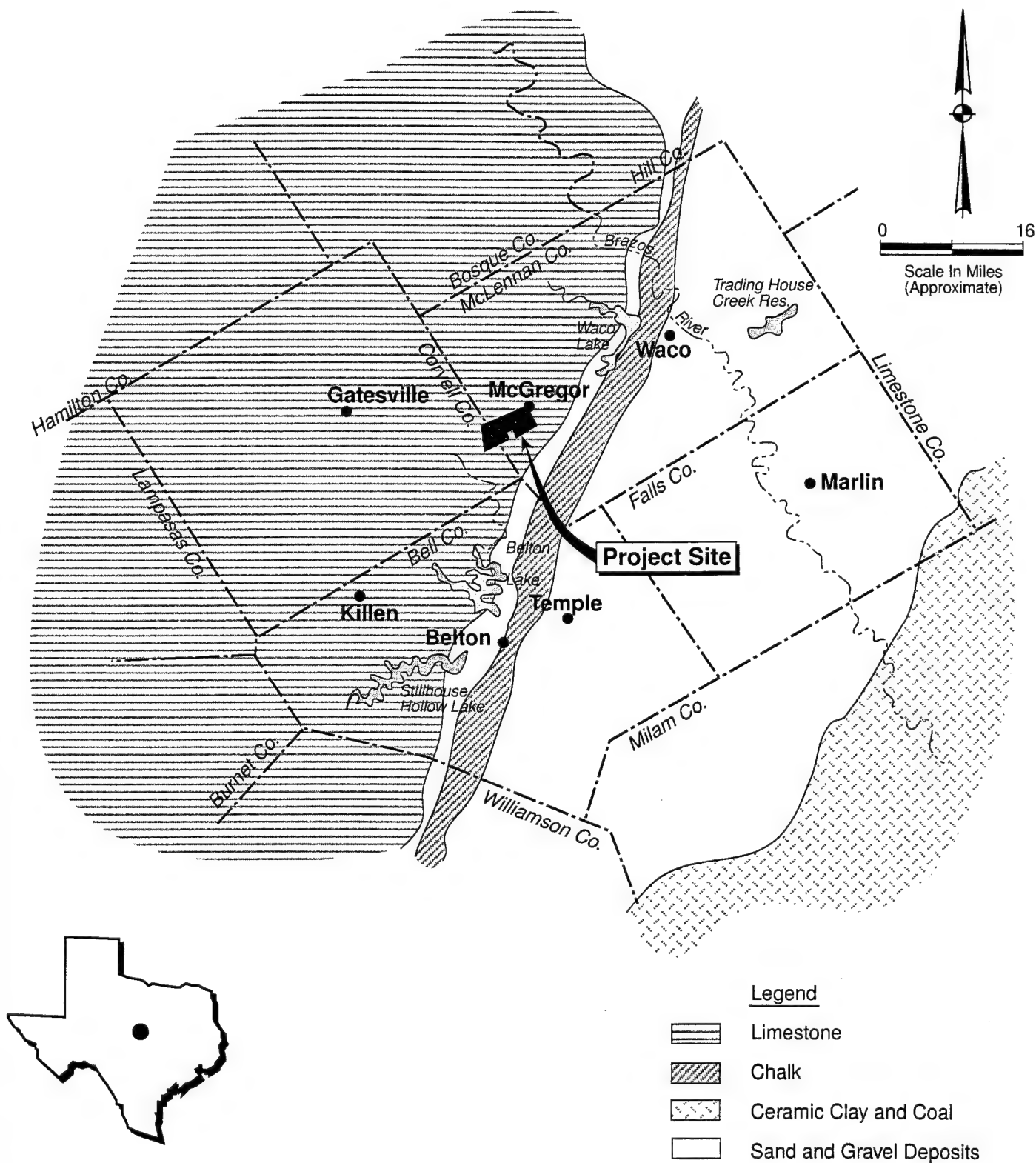
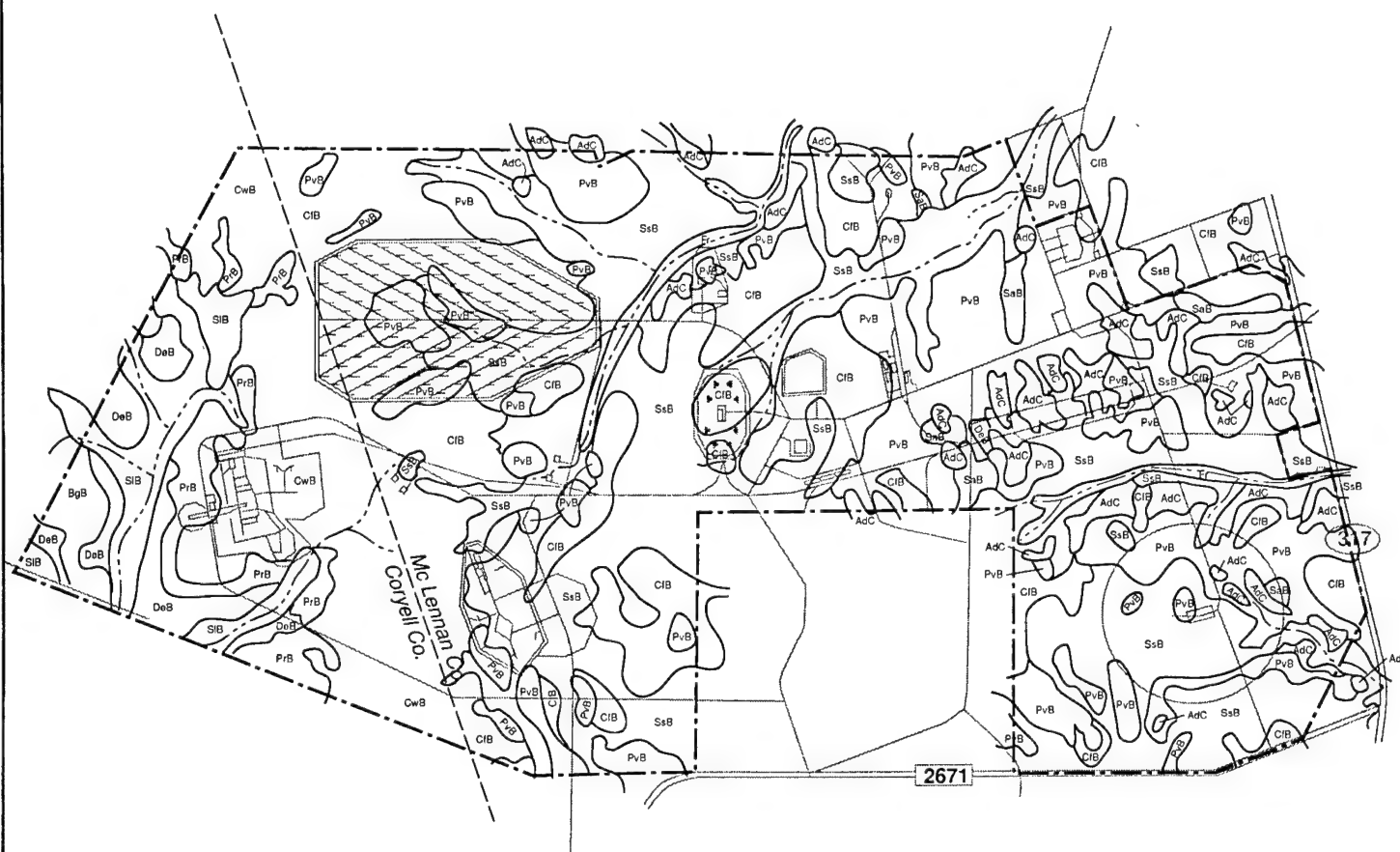


Figure 3-9. Mineral Resources (Bureau of Economic Geology, 1974)

Note: Multiply by 1.60935 to convert miles to kilometers.



Legend

AdC	Aledo gravelly clay loam, 2 to 5 percent slopes
BgB	Bolar gravelly clay loam, 1 to 4 percent slopes
CfB	Crawford clay, 0 to 2 percent slopes
CwB	Crawford silty clay, 1 to 3 percent slopes
DeB	Denton silty clay, 1 to 3 percent slopes
Fr	Frio silty clay, occasionally flooded
PrB	Purves gravelly silty clay, 1 to 3 percent slopes
PvB	Purves clay, 1 to 3 percent slopes
SaB	San Saba clay, 0 to 2 percent slopes
SIB	Slidell silty clay, 1 to 3 percent slopes
SsB	Slidell clay, 0 to 2 percent slopes

—	Soil Boundary
- - -	NWIRP McGregor Boundary
- . - .	County Boundary

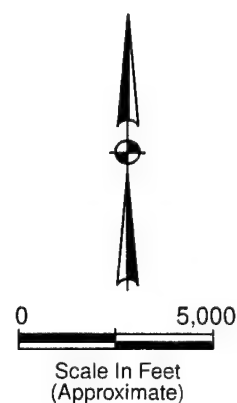


Figure 3-10. NWIRP McGregor Soils Map
(U.S. Department of Agriculture, Soil Conservation Service 1978-79)

Note: Multiply by 0.3048 to convert feet to meters.

Denton silty clay is found in the southwestern portion of the plant property and on midslopes between drainage ways and ridgetops or summits. The soil is well drained, permeability is low, and water capacity is medium. Surface runoff is medium, and the hazard for erosion is moderate. Denton soil is well suited for use as cropland and pasture (SCS, 1985a).

Bolar gravelly clay loam is located in a few areas in the extreme southwestern portion of the plant property. The soil is well drained, permeability is moderate, and available water capacity is low. Surface runoff is medium, and hazard for erosion is moderate. Bolar soil is moderately suited for use as cropland and pasture (SCS, 1985a).

Aledo gravelly clay loam is primarily located in the central eastern portion of the plant property. The soil is well drained, permeability is moderate, and water capacity is very low. Runoff is medium, and the hazard of erosion is moderate. Aledo soil is mainly used for rangeland. Due to the layers of fractured rock near the surface and very low water capacity, Aledo soil is poorly suited to use as cropland or pasture (SCS, 1985a).

San Saba clay is located in a few portions of the eastern side of the plant property. It is moderately well drained. Permeability is very low when the soil is saturated and rapid when it is dry and cracked. Available water capacity is medium, runoff is slow to medium, and the hazard for erosion is moderate. San Saba soil is well suited to use as cropland and pasture (SCS, 1985a).

Frio silty clay is found in the central and eastern portions of the plant property along creek beds. The soil is well drained, permeability is moderately slow, and available water capacity is high. Runoff is slow, and the hazard for erosion is slight. Frio soil is well suited to use as cropland and pasture (SCS, 1985a).

3.1.3 Air Resources

Regional Air Quality

Air quality in Texas is defined with respect to conformity with the National Ambient Air Quality Standards (NAAQSs). These standards were developed and promulgated by the Environmental Protection Agency (EPA). The six priority air pollutants constituting the NAAQSs are ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2 , often reported as part of nitrogen oxides, or NO_x), particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), and lead. The EPA delegates authority to the Texas Natural Resource Conservation Commission (TNRCC) for monitoring and enforcing air quality regulations in Texas. The TNRCC has adopted the standards for the criteria pollutants listed in Table 3-2, which consist of the established EPA standards.

The EPA and TNRCC classify geographic regions of Texas as having air quality better than or

TABLE 3-2 NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQSS)

<u>Pollutant</u>	<u>Time Frame</u>	<u>Primary</u>	<u>Secondary</u>
PM ₁₀	Annual Arithmetic Mean ¹	50 ug/m ³	50 ug/m ³
	24 Hour Average ¹	150 ug/m ³	150 ug/m ³
	Annual Average ¹	0.03 ppm	NA
	24 Hour Average ³	0.14 ppm	NA
SO ₂	3 Hour Average ³	NA	0.5 ppm
	1 Hour Average	NA	NA
	8 Hour Average ³	9 ppm	9 ppm
CO	1 Hour Average ³	35 ppm	35 ppm
O ₃	1 Hour Average ¹	0.12 ppm	0.12 ppm
Lead	Quarterly Average ¹	1.5 ug/m ³	1.5 ug/m ³
NO ₂	Annual Arithmetic Mean	100/ug/m ³	100/ug/m ³

ppm = parts per million

ug/m³ = micrograms per cubic meter

Notes:

¹ Not to be exceeded.

² Not to be exceeded over three days during a three year period.

³ Not to be exceeded more than once per calendar year.

Source: TNRCC, 1994

equal to (*attainment*) or worse than (*nonattainment*) these standards. The TNRCC has classified McLennan and Coryell counties as being in *attainment* with all the criteria pollutant NAAQSs (Bureau of Land Management, 1996). There is no established air monitoring station in the vicinity of NWIRP McGregor. The closest air monitoring station to NWIRP McGregor is located in Temple, Texas (Bell County) and it monitors PM₁₀ (TNRCC, 1995).

Particulate matter (PM) standards have recently been revised, finalized, and published in the Federal Register (F.R.) on July 18, 1997 (62 F.R. 38652-38701). The primary annual standard for PM₁₀ is identical to the annual standard last modified in July 1987: 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), expected annual arithmetic mean, averaged over 3 years. The revised 24-hour PM₁₀ standard of 150 $\mu\text{g}/\text{m}^3$ is very similar to the previous 24-hour standard; however, is based on the 99th percentile of 24-hour PM₁₀ concentrations for a period of one year, averaged over three years, at each monitor within an area. Additionally, two new PM standards have been added for PM less than 2.5 microns in aerodynamic diameter (PM_{2.5}): 1) annual - 15 $\mu\text{g}/\text{m}^3$, based on the 3-year average of annual arithmetic mean PM_{2.5} concentrations from single or multiple community-oriented monitors, and 2) 24-hour - 65 $\mu\text{g}/\text{m}^3$, based on the 3-year average of the 98th percentile of 24-hour PM_{2.5} concentrations at each population-oriented monitor within an area.

These new PM standards went into effect on September 16, 1997. Since establishing a comprehensive monitoring network and gathering three years of acceptable monitoring data will take until 2004, the EPA will issue "unclassifiable" designations for PM_{2.5} for all areas in 1999. The EPA and State Governors will not be able to make the first determinations about which areas should be redesignated from unclassifiable to nonattainment status until 2002, or later. Upon being designated as a nonattainment area, States will have three years to develop pollution control plans and submit them to the EPA demonstrating how they will meet the standard.

The EPA has also changed the primary standard for ozone (Federal Register, December 13, 1996 [61 F.R. 65716-65750]), which was last modified in 1979. The following is a summary of the changes:

- The current 1-hour primary standard at 0.12 parts per million (ppm) is replaced by an 8-hour standard at a level of 0.08 ppm based upon the 3-year average of the annual fourth-highest daily maximum 8-hour average of continuous ambient air monitoring data over each year at each monitor within an area.
- The current 1-hour secondary standard is replaced by an 8-hour standard identical to the new primary standard.

These new ozone standards went into effect on September 16, 1997. The EPA will work with State Governors to designate areas as nonattainment for ozone by the year 2000 and areas will

have until the year 2003 to develop and submit State Implementation Plans (SIPs) to provide for attainment of the new standard. The current 1-hour standard will continue to apply to areas not attaining it for an interim period to ensure an effective transition to the new 8-hour standard.

The prevailing wind in the NWIRP McGregor area is from the south with average wind speeds between 4 and 18 knots, or approximately 5 to 21 miles per hour (mph) (8 to 34 km per hour) (Texas Department of Water Resources [TDWR], 1983). Cities within the vicinity of NWIRP McGregor are Oglesby, to the northwest, and the City of McGregor, immediately to the northeast of the plant.

Air Emission Sources

There are some existing commercial/industrial air emission sources in the general vicinity of NWIRP McGregor, but NWIRP McGregor was the primary air emission source for the area prior to being placed into interim caretaker status. Based on Superfund Amendments and Reauthorization Act (SARA) Title III environmental records researched as part of environmental baseline conditions, a number of releases to the atmosphere have occurred at NWIRP McGregor since 1987. Between 1987 and 1992, approximately 640,950 lbs (290,730 kg) of air pollutants were released to the environment (U.S. Navy, 1996c).

There was one permitted air emission source at NWIRP McGregor--a vapor degreaser unit that was removed during plant closure. Other air emission sources present during pre-closure operations of NWIRP McGregor included:

- Five (5), steam-generating boilers that operated under TNRCC Standard Exemption No. 7.
- Combustion units that operated solely for comfort heating purposes were operated under TNRCC Standard Exemption No. 7.
- Grit blasting operations that qualified for TNRCC Standard Exemption No. 102(a).
- Seven (7) paint booths that operated under TNRCC Standard Exemption No. 75.
- Propellant mixing bowls that operated under grandfathered status.

The TWC, precursor agency to the TNRCC, determined that the Area S operations were permitted to operate under Federal hazardous waste standards and regulations as a hazardous waste disposal site under interim status and would be appropriately permitted under 40 CFR Part 264.600 as a miscellaneous unit (U.S. Navy, 1994b). Appropriately, the TNRCC issued a RCRA permit to NWIRP McGregor on January 16, 1991 for the disposal and open burning in

Area S of certain wastes (rocket fuel residual) with specific restrictions and guidelines (TNRCC, 1996a).

- Area S - open burning/open demolition of propellant, igniter compounds, explosives, etc.

The materials that could be disposed of at Area S consisted of propellant, propellant ingredients, igniter compositions, explosives, contaminated process materials, and explosive-contaminated solvents. These materials could consist of any one or a combination of the following: ammonium perchlorate, nitrate esters, ammonium nitrate, cyclorotrimethylenetrinitramine, triaminotrinitrobenzene, toluene, Stoddard solvent, 1,1,1-trichloroethane, and nitramines (U.S. Navy, 1996c).

The permit and interim status authorization for Area S also restricted open burning/open demolition activities under certain meteorological conditions (i.e., the wind direction must be "away from" the City of McGregor at a speed between 6 and 23 mph [9.7 to 37 km per hour]) and limited the types and quantities of materials which could be treated in this permitted miscellaneous unit. During pre-closure operations, to manage the open burning of propellant at NWIRP McGregor, a smoke and pollution easement was established on 90 ac (36 ha) of land located north of Area A. Since operations have ceased, this easement has been removed. The formal closure procedure for this RCRA permitted unit, including the development and implementation of a RCRA Closure Plan and concurrence of closure from the TNRCC, are required for Area S prior to property transfer.

During March 1989, 31 significant sources of volatile organic compounds (VOCs) emissions were surveyed at NWIRP McGregor. The calculated emission rate of VOCs was estimated at 5.7 tons (5.2 metric tons) per year, which was below the Title V regulatory threshold.

Low volume or fugitive air emission sources in the vicinity of NWIRP McGregor are primarily Trane Co., McGregor Furniture & Bedding Co., Companion Vans Inc., McGregor Welding and Machine Works, Smead Manufacturing, Farmland Industries, Inc., SRS Industries Inc., Perm-a-Dwell Corporation, Centex Waste Management, Pledger Construction, ESCO Distributors, Inc., and Cen-Tex Ag Supply (U.S. Navy, 1996c).

Area service stations, with registered underground storage tanks and potential fueling-related fugitive air emissions, include Finley's Service Station, Anderson Self Help Texaco, Palmer Oil No. 23, Anderson Oil & Tire Co., Foster Wheeler Energy Corp., Diamond Shamrock Refining and Marketing Company (No. 1332), Payless service station (No. 688), Anderson Oil & Tire Co., McMullen Auto Supply, Gulf Station, Dandy Dan's, Harry's Service Station, and First Stop No. 102. Other commercial or municipal facilities with registered underground storage tanks include the McLennan County Electric Co-op, Precinct 4 Auxiliary Yard, McLennan County Precinct No. 4 police stations, Pizza Station, McGregor School, Billy Boren, H&B Contractors,

Harris Creek Grocery, Congoleum Corporation, Kinder Division, Perm-A-Dwell Corporation, McGregor Tool Shed (owned by AT&SF Railway Co.), Tom Kirk Ford, Centex Waste Management (fleet re-fueling), Pledger Construction (fleet re-fueling), Farmland Industries (fleet re-fueling), McGregor Municipal Airport, ESCO Distributors (fleet re-fueling), Jimmy Ray Westerfeld (farm or residential facility), and, Cen-Tex Ag Supply (retail sales) (U.S. Navy, 1996c).

The area surrounding NWIRP McGregor is primarily agricultural. In 1993, there was a complaint regarding the discharge of crop duster chemicals in the vicinity of McGregor. Another potential local source of air pollutants (dust emissions) is the grain elevator located within the city limits of Oglesby, Texas.

3.1.4 Noise

Noise is generally classified as annoying or unwanted sound and, typically, sound levels higher than 65 decibels (dB) are considered to be annoying to many individuals. The setting in which the sound is heard can play a large role in its acceptability. For example, sounds considered acceptable during typical daytime business hours may be considered intrusive at night. Figure 3-11 illustrates decibel levels and common noises associated with them.

Most sounds associated with previous (pre-closure) activities at NWIRP McGregor can best be characterized as being industrial or urban (i.e. truck/automobile traffic, diesel engine equipment operation, and construction activities) in nature. Sound levels in proximity to these general activities can range from approximately 50 dB to 80 dB, depending on separation distance. Historically, Areas M, L, and R at the NWIRP McGregor site produced high intensity noise while engaging in activities associated with manufacturing and ordnance and rocket motor testing. A rocket launch is known to measure approximately 180 dB (USAMC Installations and Services Activity, undated). Based on 1990 noise data, the Patriot missile rocket motor produces an impulsive noise source that measures 145 dB at 800 feet (244 m) from source (U.S. Army Missile Command, 1996). It can be assumed that similar activities at NWIRP McGregor generated similar noise levels. Any explosions which may have occurred would have created noise levels in a high decibel range. However, the high intensity noise generated from these areas would typically be short in duration, rapidly damped and discontinuous.

At this time, industrial activities at NWIRP McGregor have been discontinued and industrial-related noise no longer exists. Currently, the majority of the site is utilized for agricultural purposes and sensitive receptors may be susceptible to occasional noises associated with farm equipment operation and agricultural activities. These noise sources are intermittent and of lower intensity than the industrial noise sources described earlier.

The closest sensitive receptors to previous noise sources at NWIRP McGregor (for example, Areas L and R) include a residential area located in the City of McGregor, immediately

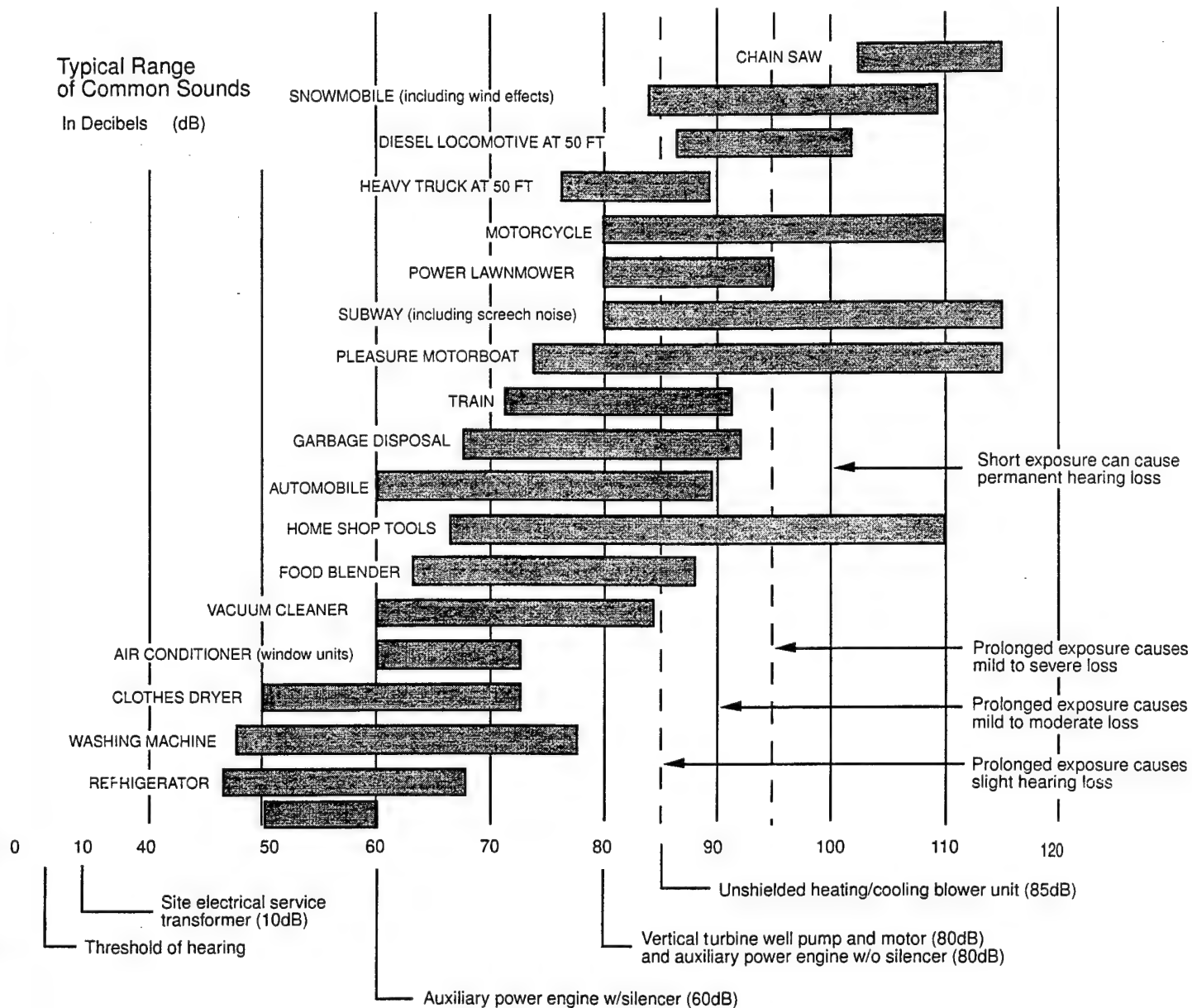


Figure 3-11. Typical Range of Common Sounds

adjacent to the northeast site boundary, and the City of Oglesby, located west of the facility. These sensitive receptor areas were located at least two miles away from the areas at NWIRP McGregor that were most likely to generate high intensity noise. The McGregor High School is located approximately 2.8 mi (4.5 km) east of Area R and 8 mi (13 km) northeast of Area L. Any noise produced at NWIRP McGregor would have been buffered by distance and the intensity would have been greatly reduced at the receiver locations.

NWIRP McGregor is subject to a noise ordinance titled "Noise" under Chapter 11, Article 2 of the McGregor City Code. Although the ordinance does not state any maximum allowable noise levels in terms of decibels, it prohibits types of noises such as horns, radios, loudspeakers, yelling, fireworks, pile drivers, etc., or other noises of the same characteristics, intensity, or annoyance which disturb the peace and quiet between the hours of 10:00 p.m. and 7:00 a.m. There were no complaints to the City of McGregor regarding noise generated by pre-closure activities in recent years (City of McGregor, 1995b).

3.1.5 Water Resources

Surface Water

NWIRP McGregor lies within the Brazos River Basin. The Brazos River Basin extends from the New Mexico state line southeastward to the Gulf of Mexico, a distance of approximately 600 mi (966 km) (TWC, 1974). The width of the Brazos River Basin varies from a minimum of 70 mi (113 km) in the High Plains to a maximum of 110 mi (177 km) in the vicinity of Waco, Texas. Total basin drainage area is 45,573 square miles (118,034 square km); at least 43,000 square miles (111,370 square km) is located in Texas (TNRCC, 1994). At the surface water quality monitoring station in Waco, Texas during the period from 1899 to 1964, the Brazos River had an average annual runoff of 1,815,000 ac-ft (2.24 trillion liters) from a drainage area of 28,500 square miles (73,800 square km) of which 9,566 square miles (24,776 square km), above the Cap Rock Escarpment, is probably non-contributing (Texas Water Development Board [TWDB], 1966). The flow of the Brazos River at Waco has been affected by increasing reservoir storage and river diversion. The maximum discharge at the Brazos River station at Waco was recorded at 246,000 cubic feet per second (cfs) (7,000 m³ per second) (TWDB, 1966).

The Brazos River basin has been divided into 55 segments which consist of 2,588 stream miles (4,165 km) and 22 major reservoirs. The stream segment known as 1246, Middle/South Bosque River, is present north (Middle Bosque River) and south (South Bosque River) of the NWIRP McGregor site (Figure 3-12). There are two domestic outfalls and two industrial outfalls permitted for this segment; total permitted flow is 1.14 mgd (4.32 million liters per day). The segment is classified as water quality limited and designated uses are contact recreation and high quality aquatic habitat (TNRCC, 1994). Nitrogen levels are elevated. The water quality limited classification is related to the need for advanced wastewater treatment at

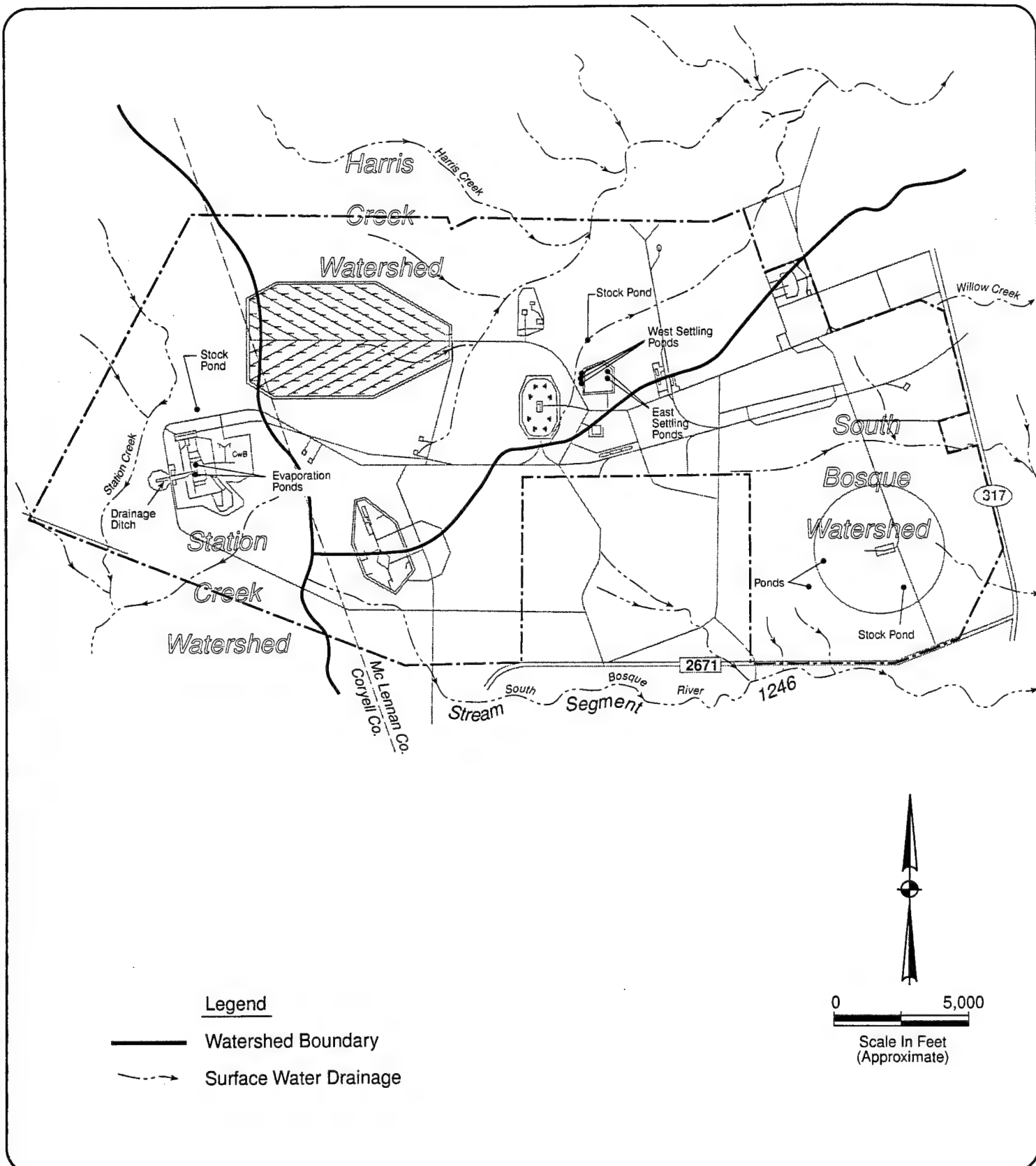


Figure 3-12. Area Watershed and Surface Drainage Map (U.S. Navy, 1994b)

Note: Multiply by 0.3048 to convert feet to meters.

the City of McGregor wastewater treatment plant which discharges into South Bosque River. Water quality criteria for segment 1246 is summarized by Table 3-3 (30 TAC § 307.10 (1)).

All the streams within NWIRP McGregor site are intermittent and, during periods of drought, are subject to drying up. Surface water is provided by tributaries of Station Creek, Harris Creek, and the South Bosque River. As a result of the limestone bedrock, the surface water is hard. Surface water within the site and surrounding areas is used solely for agriculture, primarily as water for livestock. All water for human and industrial uses comes from groundwater (U.S. Navy, 1994b).

Three watersheds exist within the boundaries of NWIRP McGregor. Figure 3-12 illustrates the three watersheds and indicates the direction of surface water flow. The Station Creek Watershed encompasses about one-fifth of the land area in the western most portion of the site. This portion of the site drains to the south into Station Creek, while the rest of the site drains to the east. Drainage from Station Creek flows into the Leon River watershed, then into the Little River Watershed, which empties into the Brazos River. The Harris Creek Watershed encompasses most of the northern portion of the site. This portion drains northeast into Harris Creek, then into the South Bosque Watershed, which empties into the Brazos River. The South Bosque Watershed occupies the northeastern and most of the southern portion of the site. The southern portion of the site drains southeastward into the South Bosque River, then empties into the Brazos River (U.S. Navy, 1994b).

Dams and reservoirs in the vicinity of NWIRP McGregor are the Waco Dam and Reservoir in McLennan County and the Belton Dam and Reservoir in Bell County. There are no dams or reservoirs located within the NWIRP McGregor boundaries, although the City of McGregor draws water from Lake Belton for potable water (City of McGregor, 1995a). The City of McGregor also obtains potable water from groundwater supplies. Belton Dam and Reservoir are located 4 mi (6 km) north of Belton at river mi 16.7 (km 26.9) on the Leon River, a tributary to the Little River, which is a tributary of the Brazos River. The upper part of the reservoir extends into Coryell County (TWC, 1964).

Two ponds, five settling ponds (two which are dry), three stock ponds, and two evaporation ponds were used for industrial purposes at NWIRP McGregor. A drainage ditch, located in the western portion of Area M and draining into Station Creek, is present at the site. Figure 3-12 depicts the location of each of these ponds and the drainage ditch. Area S has two ponds in the southwestern portion of the area and one stock pond in the southeastern portion. Area F has three settling ponds, designated as the West Settling Ponds, located on the western portion of the area just outside the boundary fence. There are also two additional ponds, designated as the East Settling Ponds, within Area F; however, these settling ponds are presently dry. One stock pond exists north of Area F. One stock pond is located in the northern portion of Area M. Two small evaporation ponds also exist in Area M. Normally, these evaporation ponds do not discharge, but any overflow from the ponds are piped to the drainage ditch which flows into

**TABLE 3-3 TNRCC WATER QUALITY CRITERIA OF BRAZOS RIVER
BASIN SEGMENT 1246**

<u>Parameter</u>	<u>Brazos River Basin Segment 1246</u>
Dissolved oxygen	5 mg/L
pH (range)	6.5 to 9.0
Temperature	95° F
Chloride (annual average)	45 mg/L
Sulfate (annual average)	260 mg/L
Total Dissolved Solids (annual average)	700 mg/L
Fecal Coliform (30-day average mean)	200/100 mL

Source: TNRCC, 1994

Station Creek (U.S. Navy, 1994b). A detailed discussion of pond uses, contents, discharges, and any contamination is presented under Hazardous Waste in Section 3.1.6.

Of the 9,770 ac (3,954 ha) at NWIRP McGregor, approximately 9,685 ac (3,920 ha) are leased for agricultural uses. There are about 27 stock ponds located throughout the agricultural lease areas. Approximately 18 modern automatic livestock watering tanks have been installed on the leased land. Numerous drainage ditches exist on these agricultural properties (U.S. Navy, 1994a).

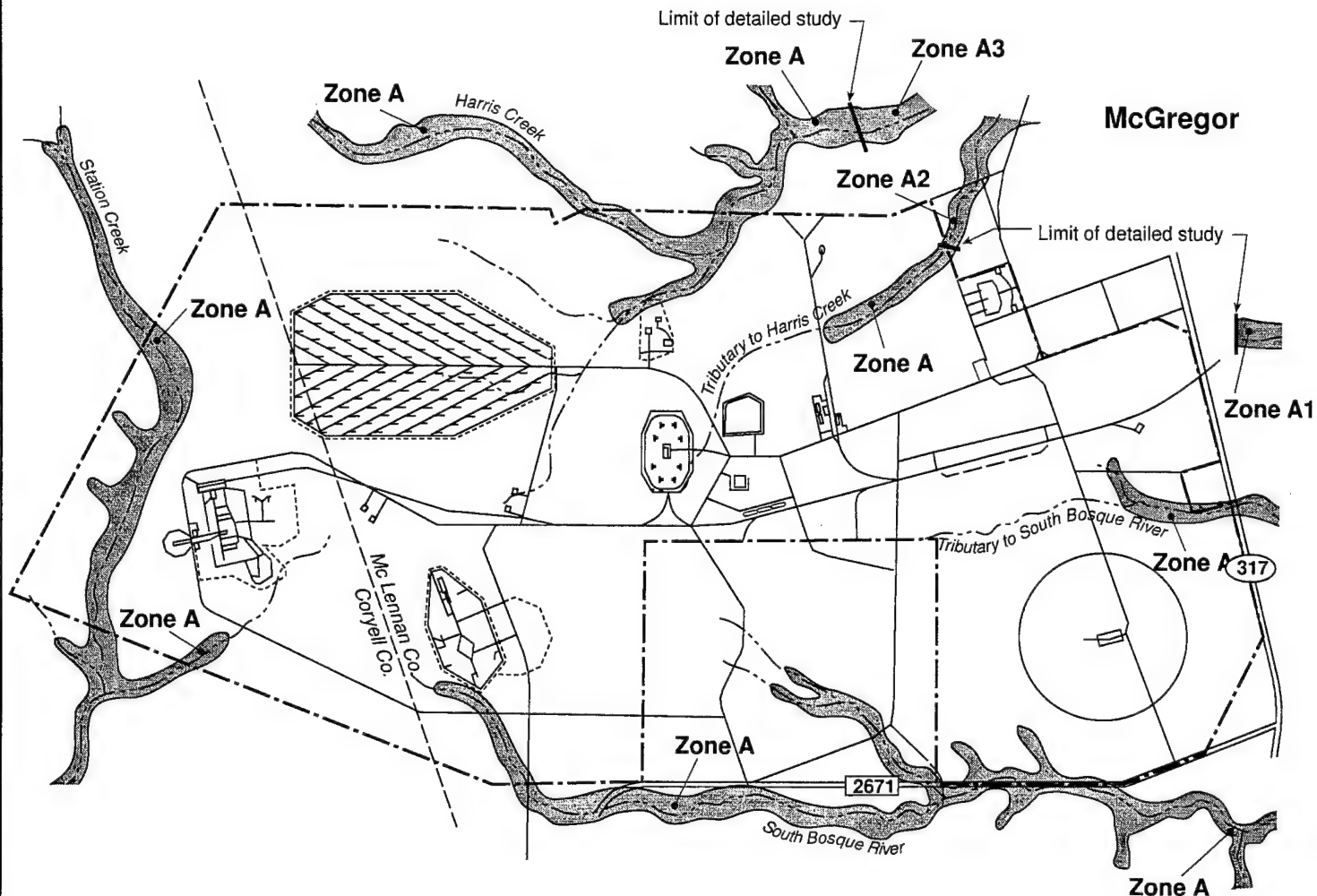
Floodplains and Drainage

Principal waterways within the immediate NWIRP McGregor plant site area are Station Creek, Harris Creek, and the South Bosque River. The majority of the plant site is outside of the 100-year floodplain of Harris Creek, Station Creek, the South Bosque River, and Willow Creek. Floodplain zones within the site are designated as Zone A, indicating that base flood elevations and flood hazard factors have not been determined for these areas. Just outside the north and east site boundaries are floodplain areas designated as Zone 1, Zone 2, and Zone 3 with base flood elevations ranging from 675 to 695 feet (206 to 212 m), mean sea level (msl), 706 to 735 feet (215 to 224 m), msl, and 705 to 726 feet (215 to 221 m), msl, respectively. Areas found within a floodplain are generally near the site boundary and are narrow stretches following the river and creek beds. Figure 3-13 illustrates the location of the 100-year floodplain and zone descriptions (FEMA, 1981).

Surface drainage from Area M (Manufacturing) enters into Station Creek. This includes any overflow from the interior settling ponds, the propellant washout pond, north stock pond, and the Imhoff settling ponds (TWC, 1989c). Prior to 1988, effluent from the silver reclamation unit was discharged into an open ditch which drains into Station Creek. Discharges to the ditch were permitted under a National Pollutant Discharge Elimination System (NPDES) permit. In 1988, the old silver recovery unit was taken out of service and replaced with a new recirculating system which either shipped effluent off-site for reclamation or disposal, or sent to the Area M water treatment plant (U.S. Navy, 1994b).

Many of the operating areas at NWIRP McGregor drained into tributaries of Harris Creek. These included Areas D (Machine Shop and Tool Fabrication); F (Engineering Laboratories and Pilot Production); G (Tooling and Equipment Storage); H (Storage Magazines); R (Environmental and Static Testing); T (Crating and Shipping); and portions of Areas A (Administration) and L (Static Testing). Drainage into Harris Creek also included effluent from the three settling ponds in the western portion of Area F, as well as any effluent from the two presently dry ponds in the northeastern portion of Area F. The pesticide spill site in Area G potentially drains into Harris Creek (TWC, 1989c).

Operating areas which drained into the South Bosque River included Areas E (Warehouse and



Legend

- Zone A** Areas of 100-year flood; base flood elevations and flood hazard factors not determined
- Zone A1-A3** Areas of 100-year flood; base flood elevations and flood hazard factors determined

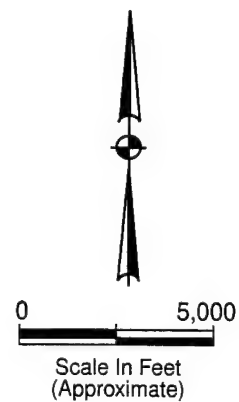


Figure 3-13. 100-year Floodplain Map (FEMA, 1981)

Note: Multiply by 0.3048 to convert feet to meters.

Garage); S (Explosives Disposal); and portions of Area L (Static Testing). Also draining into the South Bosque River are Areas J and K, which were old World War II bomb loading lines but are now in private ownership. Discharge from the City of McGregor Sewage Disposal plant (former Area Q) and surface water runoff from the area also drains into the South Bosque River (TWC, 1989c). Surface runoff from Area S migrates to the southeast corner of the bermed area.

During pre-closure operations, stormwater discharges at NWIRP McGregor were managed in accordance with all Federal, state, and local National Pollutant Discharge Elimination System (NPDES) regulations. The NPDES regulations require that a subject facility, such as NWIRP McGregor, apply for either a group or a general permit to manage stormwater.

Information prepared by Hercules Inc. for the stormwater permit identified nine stormwater outfalls discharging to three area streams. These regulated outfalls and locations are as follows:

- Outfall No. 1 -- Areas R and H
- Outfall No. 2 -- Area F
- Outfall No. 3 -- Building M-1219
- Outfall No. 4 -- Building M-126
- Outfall No. 5 -- Area L
- Outfall No. 6 -- Outfall 202 (NPDES permit)
- Outfall No. 7 -- Building M-1232
- Outfall No. 8 -- Outfall 201 (NPDES permit)
- Outfall No. 9 -- Building M-1205

A general permit was applied for and was issued for stormwater discharges associated with industrial activity at NWIRP McGregor by the U.S. EPA. The U.S. EPA's *Storm Water Permit, General Permit Coverage Notice* was issued to Hercules, Inc. in 1993. The *Notice* stated that Hercules Inc. was covered by the general permit issued by the State of Texas and was assigned Permit No. TXR00A299.

In March 1993, Alliant Inc., formerly Hercules, Inc., prepared a Stormwater Pollution Prevent Plan (PPP) which established Best Management Practices to reduce stormwater contaminant loading (U.S. Navy, 1996c). The Stormwater PPP was part of the general stormwater discharge permit application. The issued permit adopted the incorporated Best Management Practices of the PPP for NWIRP McGregor.

Groundwater

Groundwater was the source for all potable and process water at NWIRP McGregor and was obtained from the upper sand (Hensel aquifer interval) of the Trinity Group aquifers at a depth of approximately 950 feet (289.6 m) below ground surface (Figure 3-14). The Hensel aquifer

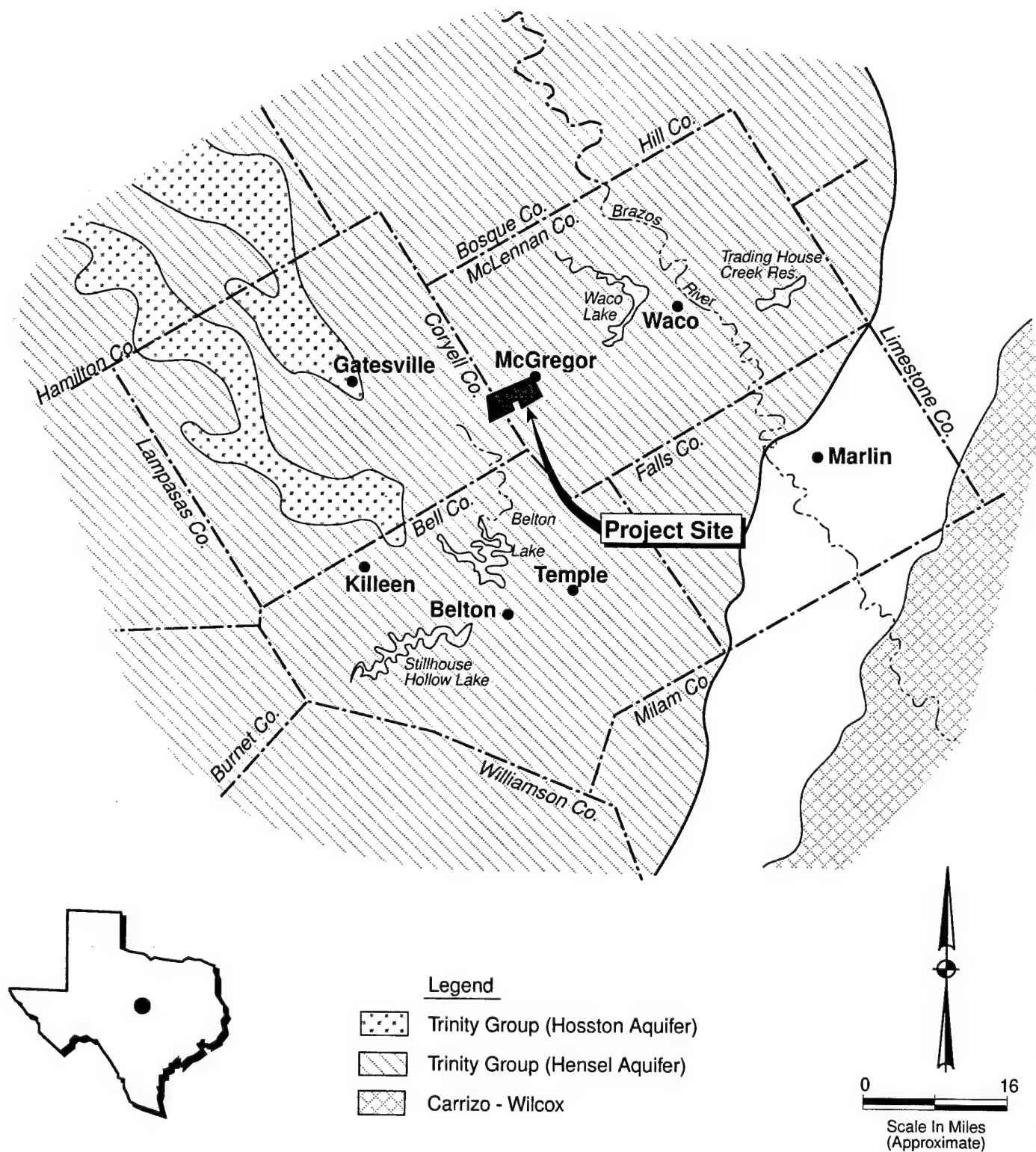


Figure 3-14. Major Aquifers (Bureau of Economic Geology, 1974)

Note: Multiply by 1.60935 to convert miles to kilometers.

interval ranges from 41 to 101 feet (12.5 to 30.8 m) thick, is composed of white, fine- to coarse-grained, unconsolidated sand, and is the principal aquifer in western McLennan County (Bureau of Economic Geology, 1976). The Hosston aquifer interval is not present in the vicinity of NWIRP McGregor (TWDB, 1990).

Four industrial water supply wells were drilled at the site in 1942 and initially produced at rates ranging from 200 gpm (757 liters per minute) to 420 gpm (1,590 liters per minute), depending on the thickness of the aquifer interval (TWDB, 1976). A fifth well was added at a later date. Three of these wells were re-drilled between 1971 and 1989; replacement wells were drilled within 200 feet (61 m) of the surface location of the initial groundwater wells (Figure 3-1). These three wells supplied all of the process and potable water for the facility (TWDB, 1995). Based on replacement well data, the Hensel aquifer interval is located about 960 feet (293 m) below ground surface and ranges from 50 to 100 feet (15 to 30 m) in thickness (U.S. Navy, 1987). Well 1B pumped at 267 gpm (1,011 liters per minute); Well 2B pumped at 235 gpm (890 liters per minute); and, Well 4B pumped at 350 gpm (1,325 liters per minute) (TWDB, 1995). Based upon pre-closure operations, water usage at NWIRP McGregor averaged about 315,000 gpd (1.19 million liters per day). There is a water treatment facility at each well and one at each of the two groundwater storage tanks. Each water treatment facility was capable of treating quantities consistent with the pumping rates and to facility demand (Alliant, 1995d). Figure 3-1 depicts the locations of the three operational wells and the associated water storage tanks.

Total groundwater intake by the three groundwater supply wells for the 1994 calendar year was 112.0 million gallons (424.0 million liters). The highest intake month was August with a total of 11.3 million gallons (42.8 million liters), and the lowest intake month with a total of 7.2 million gallons (27.3 million liters). NWIRP McGregor did not purchase any water during the year of 1994, but sold 16,558,440 gallons (62,680,000 liters) to the City of McGregor Sewer District; 9,000 gallons (34,000 liters) to Troy Dutton and Lendon Dutton in McLennan County; and, 179,000 gallons (678,000 liters) to Morris, Keltner, and Paschal Industries in McLennan County (Hercules, 1994).

The water in the Hensel aquifer generally flows to the southeast under confined conditions (artesian). Recharge of groundwater is from infiltration of precipitation in the outcrop area of the Twin Mountains Formation and from seepage of streams within the drainage networks of the Leon, Bosque, and Brazos Rivers (Bureau of Economic Geology, 1976). The rate of groundwater movement varies from 10 to 40 feet (3 to 12 m) per year and the hydraulic gradient is between 10 and 15 feet per mi (1.9 and 2.8 m per km) (Bureau of Economic Geology, 1976). An aquifer test was performed on one well owned by the City of McGregor that produces from the Hensel aquifer interval. The transmissivity of the Hensel aquifer at that location was determined to be 1,100 gpd/feet (13,660 liters per day/m) and the hydraulic conductivity was reported at 26 gpd/feet² (1,059 liters per day/m²) (Bureau of Economic Geology, 1976).

Figure 3-15 illustrates the location of groundwater pumping wells and hydrocarbon test or production wells in the NWIRP McGregor and Waco, Texas areas. A serious problem is associated with the withdrawal of groundwater from the Trinity Group aquifer, including the Hensel aquifer interval. There has been a decline of artesian pressure (water levels) throughout a large area in north-central Texas (TWDB, 1990). The primary cause of water level fluctuations is a change in the amount of water in storage. When recharge exceeds discharge, then water levels (piezometric surface) rise, and when discharge exceeds recharge, water levels decline. When an aquifer is under confined conditions and the aquifer is being mined, there would be a lowering of the piezometric (pressure) head when discharge exceeds recharge.

Figure 3-16 illustrates the 1988 water levels of the Hensel aquifer. A broad cone of depression, generated by groundwater pumping, extends across McLennan County with the center west of Waco near the community of China Springs. For the 21-year period from 1967-1988, water levels in the Hensel aquifer have declined. In the vicinity of NWIRP McGregor, water levels of the Hensel aquifer have declined by approximately 200 feet (61 m) during this 21 year period (TWDB, 1990). Based on static water levels reported in wells located within 150 feet (46 m) of each other, Well No. 2 (drilled in 1942 at NWIRP McGregor) and Well No. 2B (drilled in 1971), the Hensel aquifer water level declined approximately 245 feet (75 m) during the 29 year period ending in 1971. However, in the area of NWIRP McGregor, water level declines were less than 50 feet (15 m) during the period 1980 to 1988 (TWDB, 1990). In 1985, the City of McGregor pumped approximately 343 acre-feet (423 million liters) of groundwater. In 1985, the largest industrial use of groundwater occurred in McLennan County with 1,771 ac-feet (2,184 million liters) being pumped (TWDB, 1990).

Projections of future municipal, industrial and rural requirements are based upon TWDB revised data series population projection and projected demands per capita water use. Under projected conditions, the total annual water requirement for the north-central Texas study area is expected to increase by 40 percent from 1985 to the year 2010, at which time the annual water demand from municipal, rural communities, industrial, irrigation, manufacturing, power, mining, and livestock is estimated to be 287,762 ac-ft (355 billion liters). Of this total, municipal and rural population water needs would also increase by 40 percent to 129,453 ac-ft (160 billion liters) (TWDB, 1990). The amount of groundwater needed to supply projected demands through the year 2010 exceeds the estimated annual effective recharge to the aquifer. An increase in the amount of surface water usage is needed to meet future demands because the available groundwater supply is insufficient to meet even current levels of demand in the study area indefinitely (TWDB, 1990). Surface water supplies would be required to meet municipal and industrial needs in McLennan County. The cities surrounding Waco are anticipated to be supplied surface water with the proposed construction of Lake Bosque on the North Bosque River and by raising the surface elevation of the conservation pool in Lake Waco.

An evaluation of the groundwater pollution potential in the State of Texas was developed by

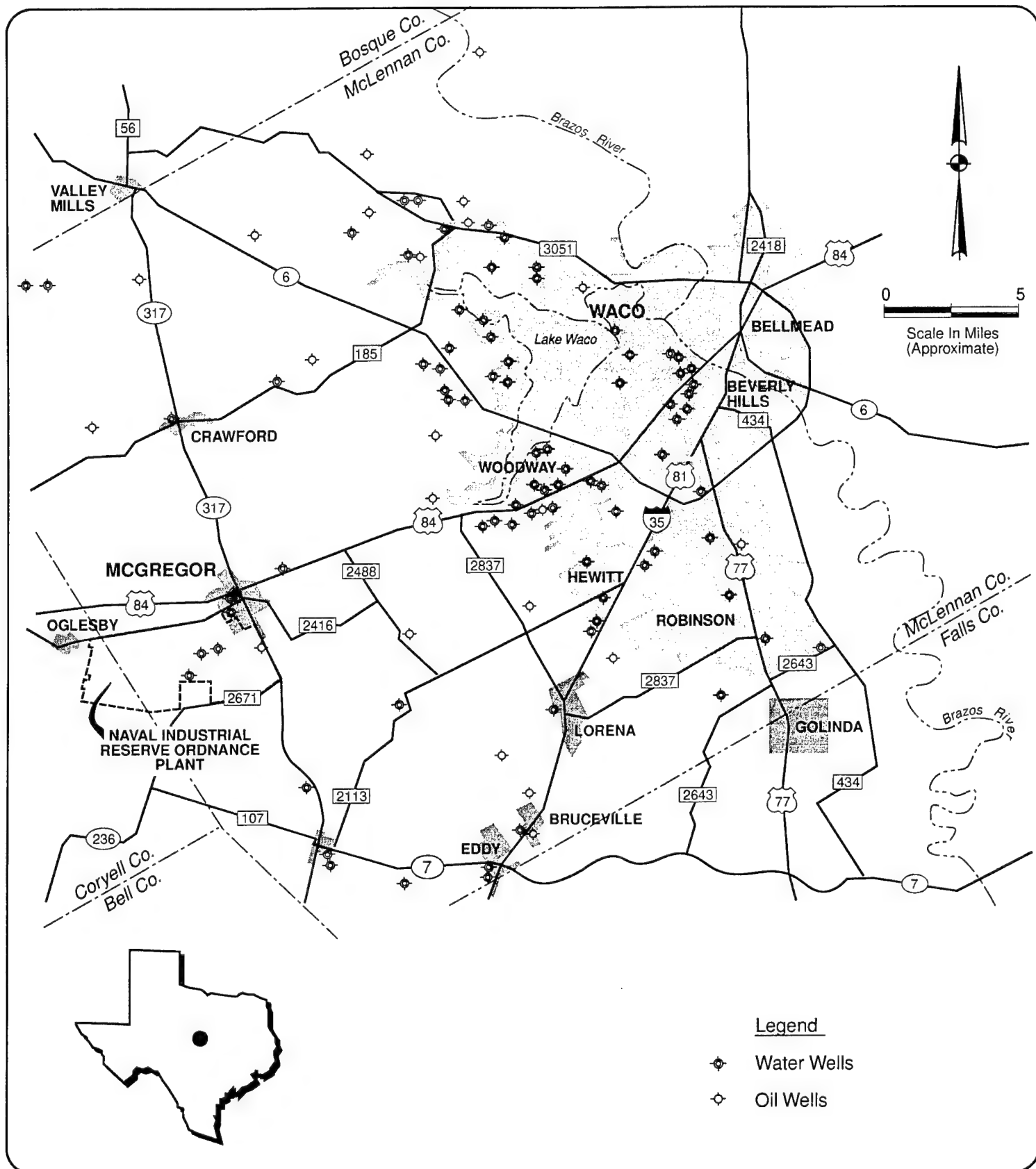


Figure 3-15. Water and Oil Wells (GeoMap, 1995)

Note: Multiply by 1.60935 to convert miles to kilometers.

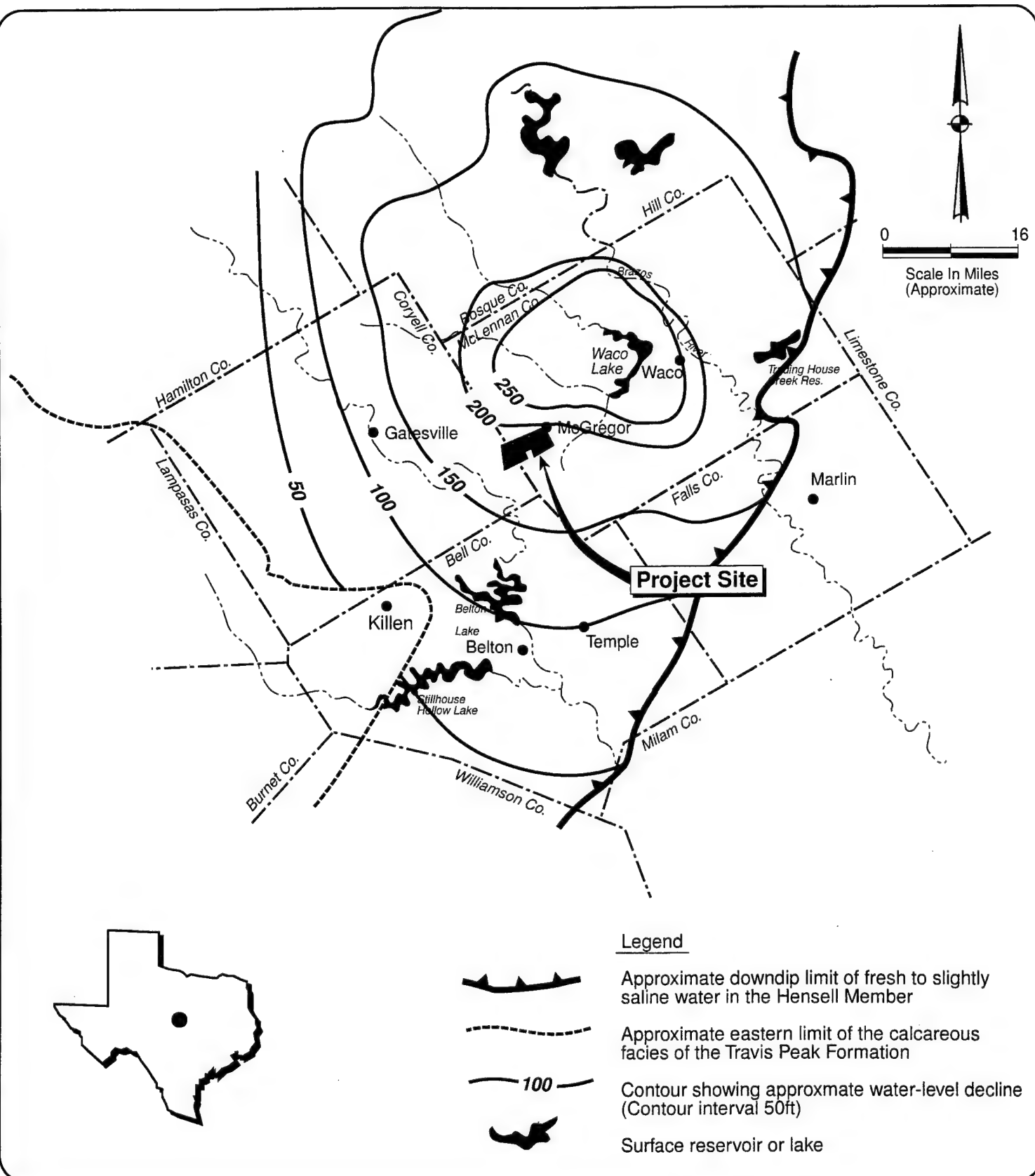


Figure 3-16. Water Level Declines in the Hensell Aquifer, Trinity Group, 1967-1988 (TWDB, 1990)

Note: Multiply by 1.60935 to convert miles to kilometers.

the Texas Water Commission in 1989. Pollution potential is the ability of a pollutant to enter an aquifer and cause contamination of groundwater. The general NWIRP McGregor area has been ranked as representing areas of lesser relative pollution potential for municipal and industrial pollution sources (TWC, 1989a) and of greater relative pollution potential for pesticide and fertilizer pollution of groundwater resources (TWC, 1989b).

Wells producing from the Hensel aquifer at NWIRP McGregor and in north-central Texas exhibit an average total dissolved solids content of 955 milligrams per liter (mg/l), which is close to the Texas Department of Health recommended limit of 1,000 mg/l (TWDB, 1990). Hensel wells usually have a high concentration of sodium; the aquifer is classified as a sodium-bicarbonate type. Iron and sulfate content are also close the recommended limits. Over 41 percent of the wells sampled for a recent study exceeded the recommended limit for fluoride concentration (TWDB, 1990). Drinking water standards for primary and secondary water contaminants are established by the Safe Drinking Water Act (SDWA). Primary standards regulate those contaminants which may have and adverse effect on the health of persons, and secondary standards regulate contaminants in drinking water that primarily affect the aesthetic qualities (i.e. taste, color, odor, etc.) of drinking water. The Hensel aquifer in the general area of NWIRP McGregor has relatively good water quality. A chemical analysis was conducted for water samples from the three wells to determine compliance with these standards. The water was found to be within the limits of the primary and secondary standards of the SDWA. Bromoform, chloroform, dibromochloromethane, and bromodichloromethane were detected at levels less than 1 ug/L, which is below acceptable limits for these VOCs (TNRCC, 1989-92). As compared to chemical analysis conducted at the time the original wells were drilled in 1942, the secondary contaminant levels for water have remained relatively the same (TWDB, 1976). Laboratory results of the chemical analysis for primary and secondary contaminants are presented by Tables 3-4 and 3-5.

The City of McGregor owns and operates three wells capable of producing a combined total of 675 gallons per minute (TNRCC, 1996b). The City is also a member of the Bluebonnet Water Supply Corporation and draws water from Lake Belton. The maximum daily water supply capacity for the City of McGregor from wells and Lake Belton is 2.18 million gallons (8.25 million liters). The City has experienced a maximum daily use of 1.8 million gallons (6.8 million liters) (City of McGregor, 1995c). The average total daily water use for the City of McGregor is 1.6 mgd (6.1 million liters per day) (TNRCC, 1996b).

In addition to the deep wells of the Hensel aquifer, there are numerous, hand-dug, shallow wells in the McGregor area, generally located in the vicinity of streams. Soil borings suggests that an unconfined, water table aquifer is present in the area at a depth of 15 to 20 feet (5 to 6 m) surface. Many of these wells yield water only during the rainy season, while others yield water continually. Much of this shallow groundwater occurs within crevice-filled limestone and in the upper few feet of bedrock, which is fractured. Movement of this upper groundwater

TABLE 3-4 PRIMARY CONTAMINANTS FOR WATER WELLS

<u>Contaminant</u>	<u>Units</u>	<u>Standard</u>	<u>Well 1*</u>	<u>Well 2*</u>	<u>Well 4*</u>
Arsenic	mg/L	0.05	<0.01	<0.01	<0.01
Barium	mg/L	2.0	0.02	0.02	0.03
Cadmium	mg/L	0.005	<0.005	<0.005	<0.005
Chromium	mg/L	0.10	<0.02	<0.02	<0.02
Fluoride	mg/L	4.0	1.3	1.3	1.2
Lead	mg/L	0.05	<0.02	<0.02	<0.02
Mercury	mg/L	0.002	<0.0002	<0.0002	<0.0002
Nitrate (as Nitrogen)	mg/L	10.0	<0.01	<0.01	<0.01
Selenium	mg/L	0.05	<0.002	<0.002	<0.002

*Composite Sample

mg/L = milligrams per liter

Source: TNRCC, 1989

TABLE 3-5 SECONDARY CONTAMINANTS FOR WATER WELLS

<u>Contaminant</u>	<u>Units</u>	<u>Standard</u>	<u>Well 1*</u>	<u>Well 2*</u>	<u>Well 4</u>
Chloride	mg/L	300	63	63	73
Copper	mg/L	1.0	< 0.02	< 0.02	< 0.02
Dissolved solids	mg/L	1,000	680	680	717
Iron	mg/L	0.3	0.02	0.02	0.10
Manganese	mg/L	0.05	< 0.02	< 0.02	< 0.02
pH	-----	≥ 7.0	8.4	8.4	8.2
Silver	mg/L	0.10	< 0.010	< 0.010	< 0.01
Sulfate	mg/L	300	145	145	144
Zinc	mg/L	5.0	< 0.02	< 0.02	< 0.02

*Composite Sample

mg/L = milligrams per liter

Source: TNRCC, 1989

approximately follows the contours of the land surface. Water from these shallow wells is generally of poor quality and is used only for crops and livestock (TWC, 1989c).

3.1.6 Hazardous Materials/Hazardous Waste

Hazardous materials and hazardous waste management activities at NWIRP McGregor are governed by multiple, sometimes overlapping, environmental regulations. The regulatory system, as it has evolved through historical regulation, has been complicated at NWIRP McGregor by multiple property operators and certain explicit regulatory requirements for DOD property owners. The following is an overview and brief history of the basic Federal and state environmental laws and regulations that govern operations and management of hazardous materials and waste at NWIRP McGregor.

Regulation of Hazardous Materials and Waste

For the purpose of the following discussion, the term hazardous waste or hazardous materials will mean those substances defined as hazardous by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. Sections 9601 et seq., as amended, and the Solid Waste Disposal Act, as amended, and by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901-6992, as amended. In general, hazardous includes those substances that because of their quantity, concentration, or physical, chemical, or infectious characteristics may pose a potential threat to human health or the environment. The state hazardous waste regulations, outlined in Texas Administrative Code (TAC), Title 30, Chapter 335, Industrial Solid and Municipal Hazardous Waste, are administered by the TNRCC.

Based on RCRA, the U.S. EPA defines wastes that are hazardous and regulates their generation, treatment, storage, transportation, and disposal. Hazardous material regulations of the Department of Transportation govern transportation of hazardous materials. Occupational Health and Safety Administration (OSHA) regulations pertain to site worker safety and health. Other regulations derived from Federal statutes applicable to NWIRP McGregor operations included those associated with the Toxic Substances Control Act (TSCA), the Clean Water Act (CWA) and the Clean Air Act (CAA).

U.S. environmental management regulations were developed in response to increasing national concern about past hazardous waste disposal methods. The U.S. EPA developed a comprehensive national program to manage sites where releases or potential releases of hazardous substances could occur. Programs to remedy past, present, or threatened uncontrolled release of contaminants from hazardous materials handling and generation sites were established under CERCLA, better known as Superfund. CERCLA is the major Federal legislation that addresses clean up of hazardous substance releases. CERCLA requires that sites be prioritized and addressed (cleaned up or remediated) based on a developed ranking

system to establish or estimate environmental risk. Sites which receive a threshold score or higher are placed on the National Priorities List (NPL) and earmarked for investigation and clean up using Federal funds. CERCLA authorized Federal action to respond to the release into the environment of hazardous substances, pollutants, or contaminants. CERCLA's emphasis is on the cleaning up of old/inactive sites and does not include clean up of spills of petroleum, oil and lubricants.

To address the concern that Federal Superfund money not be used to clean up active hazardous waste sites with viable owners and operators, Congress amended RCRA to include the Corrective Action Program. The amended RCRA program, specified in the Hazardous and Solid Waste Amendments of 1984 (HSWA), addressed environmental releases of hazardous waste and hazardous waste constituents from Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs) at permitted hazardous waste treatment, storage or disposal (TSD) facilities.

The Superfund Amendments and Reauthorization Act (SARA) of 1986, *inter alia*, established the Defense Environmental Restoration Account (DERA), codified at 10 U.S.C. 2701, and the Defense Environmental Restoration Program (DERP). The DERA was established by SARA to pay the cost of DOD responses to clean up hazardous substance sites and the DERP ensures that DOD has the authority to conduct its own environmental restoration programs.

Prior to the establishment of the National Contingency Plan (NCP) for hazardous waste sites promulgated by SARA, the Navy's Installation Restoration Program (IRP) procedures followed DOD policy guidelines that mirrored the U.S. EPA's Superfund Program. The Installation Restoration Program provides for compliance with the procedural and substantive requirements of CERCLA, as amended by SARA, as well as regulations issued under these Acts or by State laws. Although the IR Program is intended to clean up past releases of hazardous substances, it may address the clean up of past releases of any pollutant and/or contaminant that endangers public health, welfare or the environment. Clean up of past contamination from underground storage tanks and corrective action for past contamination at RCRA solid waste management sites may also be part of the IR Program. The Navy coordinates its IRP activities with the U.S. EPA and the TNRCC.

After SARA was passed, the U.S. EPA evaluated Federal facilities for possible inclusion on the National Priorities List (NPL). In 1992, NWIRP McGregor was evaluated by the U.S. EPA and did not meet the criteria for NPL listing or the implementation of CERCLA remedial response actions. In 1993, NWIRP McGregor was evaluated by the TNRCC and did not meet the criteria for state listing or the implementation of CERCLA remedial response actions at the state level.

The public is being kept informed about the IRP at NWIRP McGregor, as mandated by CERCLA and the NCP, by a public participatory program much like the one used in the

preparation of this EIS. To provide an avenue for public input to the environmental restoration of the Navy property subject to transfer, a RAB has been established as part of the IRP process. The RAB consists of representatives of the Navy, regulatory agencies and local area residents and communities. The results of all investigations performed at NWIRP McGregor is being presented to the RAB. Ultimately, this would include discussions of the remediation alternatives being considered. The RAB would also be informed of the clean up methods selected and would have an opportunity to provide comment.

During pre-closure operations, NWIRP McGregor was a hazardous waste TSD facility operating under a RCRA permit. As such, NWIRP McGregor was subject to the HSWA Corrective Action Program requirements administered by the TNRCC, as well as applicable CERCLA requirements. Under the regulatory process currently in place at NWIRP McGregor, initial site investigations have been conducted under RCRA, as amended. These investigations into past hazardous waste releases due to operations at NWIRP McGregor are addressed by the conditions of the RCRA permit that invokes the HSWA Corrective Action Program process. The RCRA permit for NWIRP McGregor includes requirements for the RCRA Facility Assessment (RFA) and the RCRA Facility Investigation (RFI). After the investigative process is complete, the RCRA permit requires appropriate corrective action and closure. The corrective action process is defined by the Corrective Measures/Corrective Measures Implementation (CMS/CMI) studies. Remediation and facility closure are ultimately approved by the TNRCC.

In October 1992, Public Law 102-426, the Community Environmental Response Facilitation Act (CERFA), amended CERCLA to establish new procedures with respect to contamination assessment, clean up, and regulatory agency notification and concurrence for closures of Federal facilities. Among other things, CERFA established the CERCLA 120(h)(4) process for identifying property environmentally available for reuse. The 120(h) process requires assessment of the environmental condition of the DOD property. The CERCLA, as amended, requires that prior to any Federal property transfers, any release, storage or disposal of hazardous materials at the site along with a description of the circumstances and any response action taken must be documented. The DOD has developed the Environmental Baseline Survey (EBS) process to document the potential impacts to human health and the environment resulting from the past operation of defense facilities. The EBS process meets the requirements of the CERCLA, as amended by CERFA.

In the state of Texas, any property identified and receiving closure concurrence of the TNRCC within an 18 month period is transferable under the 120(h)(4) process. The identified property would be disposed of when found environmentally suitable in accordance with other applicable provisions of CERCLA 120(h). Covenants are required for property transfers from the Federal government to private entities for property which has been the site of storage, release, or disposal of hazardous materials. These covenants must warrant that necessary remedial action has been taken and, that if additional remediation is needed, it will be performed by the Federal

government. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process. Prior to transfer, the Navy would establish covenants pertaining to remedial action, if necessary, and would warrant that necessary remedial action has or will be taken.

The Navy initiated the IRP process at NWIRP McGregor based on the findings of the RCRA investigations. In 1992, the Navy developed a Community Relations Plan as part of the IRP. In 1996, this plan was finalized after incorporating the results of other CERFA-mandated investigations (i.e., the base-wide EBS).

Hazardous Materials

A variety of hazardous materials and substances were generated, handled, stored, and/or disposed of during pre-closure operations at NWIRP McGregor. This section discusses the hazardous materials and solid waste management activities at NWIRP McGregor from a historical perspective.

Since 1942, materiel for military applications, shells and airplane bombs, munitions-grade and fertilizer-grade ammonium nitrate, and production of components for various weapons have been manufactured and produced at the site. As World War II ended, different manufacturers leased or purchased portions of NWIRP McGregor, including Texas A&M University which established an agricultural experiment station. Pre-formed asbestos pipe insulation, insecticides (primarily DDT), ammonium nitrate fertilizer, mattresses, assembly and refinishing of furniture, and enameling of appliances were among the goods and services produced after World War II (U.S. Navy, 1996a). In 1958, solid propellants and high-energy solid rocket fuels were produced under management of Rocketdyne. Large rocket casings long-duration, molybdenum-tungsten nozzles, gas generators, and turbine starters were manufactured at the site in the 1950's. In the early 1960's, the plant expanded and was modified to produce and support a variety of solid propulsion fuels, components and systems, and to undertake exploratory, advanced engineering development programs (U.S. Navy, 1996a). Support of rocket and missile research and production of components for weapons delivery systems occurred at the site during the forty years following return to government ownership, under the oversight of both the U.S. Air Force and the U.S. Navy and a number of contractors.

Hazardous materials have been stored at numerous locations throughout the site. Types of hazardous materials used and stored on-site included the following:

- waste explosives and propellants;
- waste acid;
- spent carbon from explosive wastewater treatment;
- non-halogenated waste solvents;
- halogenated waste solvents;

- cadmium-bearing waste;
- liquid paint waste;
- aqueous lab waste;
- solid lab waste;
- solids contaminated with mercury;
- photographic fixer waste;
- contaminated clothing and rags or wipes; and,
- plating or galvanizing sludges.

NWIRP McGregor managed hazardous materials that are common in building structures or equipment. These hazardous materials usually do not create a health hazard unless disturbed during remodeling or demolition. Three common static hazardous materials are asbestos, lead-bearing paint, and polychlorinated biphenyls (PCBs). Given the situation by which these materials become hazardous, i.e. during remodeling or demolition activities, they will ultimately become hazardous waste products and, as such, are addressed in the section covering hazardous waste.

In 1992, a RCRA hazardous waste storage and processing permit was issued to NWIRP McGregor. The RCRA Part B permit, No. HW-50081, is valid until January 17, 2001 and stipulates that Area H, with three storage magazines, can be used for long-term storage of drummed hazardous waste. These magazines are hazardous waste, drum storage areas (greater than 90-day) and a fourth is used for non-hazardous waste storage. These storage magazines, H-800-1, H-800-3, and H-800-7, are permitted to store drums containing solvents, corrosive wastes, propellant, and other hazardous waste (Alliant, 1995a). Each storage magazine has a permitted capacity of 5,500 gallons (20,800 liters). The total permitted, hazardous waste storage capacity at NWIRP McGregor is 16,500 gallons (62,500 liters).

A RCRA Part A permit application for construction was submitted for three burning pans to be located in Area S. These pans were to be used to help manage the thermal treatment (burning) of propellant and contaminated materials. The TNRCC authorized the construction of the burning pans in Area S under interim status. Construction of these burning pans ceased when NWIRP McGregor was identified for closure. The formal RCRA closure procedure for the RCRA permitted units at NWIRP McGregor, including the development and implementation of a RCRA Closure Plan, is required for each permitted storage and disposal unit and the burning pans in Area S. The RCRA Closure Plan for permitted storage units and the burning pans in Area S was submitted to the TNRCC in 1989 and has received approval (Alliant, 1996a). Although closure and remediation of these RCRA-regulated units would be conducted under RCRA, the CERCLA process through the Navy's IRP, would proceed concurrently to address non-RCRA sites.

Ordnance

No ordnance has been manufactured or stored at the site since the closure of the Bluebonnet Ordnance Plant following World War II. Decontamination of production lines was completed by November 30, 1945. No decontamination was performed in the High Explosive or Finished Ammunition Areas (Areas H and N, respectively) because these areas were storing approximately 40 million lbs (18.1 million kg) of explosives at the time of planned decontamination. Loading docks Area T, Area K, and Area J also were not decontaminated because of on-going ordnance material storage and shipment (U.S. Navy, 1996c).

In 1995, an investigation of the explosive contamination at NWIRP McGregor was completed. Areas F, H, L, M, R and S were investigated and 141 potentially contaminated buildings, building cells or bays were identified. Recommendations for decontamination were developed for 54 sites. Of the sites recommended for decontamination, Area S was the single location found to have explosive contaminants present. Other areas were contaminated with dust generated by the manufacture of ammonium nitrated and ammonium perchlorate. This dust, if ignited, would burn vigorously and could cause pressure ruptures if confined. The hazard posed by these contaminants is a flash fire hazard. Building 611, in particular, may be a highly hazardous flash fire area (U.S. Navy, 1996c).

In 1996, preparatory to closure, an explosives decontamination plan was developed for NWIRP McGregor in conformance with DOD 5160.65M and DOD 6055.9-STD. The cost for explosives decontamination at NWIRP McGregor is approximately \$8 million, not including Area S. The Indian Head Division of Naval Surface Warfare Center is currently providing the explosives remediation of Area M (NSWC Indian Head Division, 1998).

Radioactive Materials

The only radioactive materials used or stored at NWIRP McGregor have been enclosed in the industrial electron beam welding equipment. The use of this equipment did not generate radiological waste. X-ray units used at the plant for non-destructive testing generated electromagnetic energy but did not contain radioactive materials (U.S. Navy, 1996c). In addition, no information related to the disposal of radioactive materials at NWIRP McGregor was discovered during the environmental baseline survey.

Radon

Radon is a naturally occurring, colorless, and odorless radioactive gas that is produced by radioactive decay of naturally occurring uranium. Uranium decays to radium, of which radon gas is a by-product. Radon is found in high concentration in rocks containing uranium such as granite, shale, phosphate, and pitchblende. Atmospheric radon is diluted to insignificant concentrations. Radon may also be found in soils contaminated with industrial radioactive

waste. Radon present in soil may enter a building through small spaces and openings, accumulating in enclosed areas such as basements. The cancer risk caused by exposure through the inhalation of radon is currently a topic of concern.

There are no Federal or state standards regulating radon exposure at the present time. The U.S. EPA offers a pamphlet, *A Citizens' Guide to Radon*, which offers advice to persons concerned with the possibility of radon in their homes. Navy policy requires the implementation of the Navy Radon Assessment and Mitigation Program to determine levels of radon exposure on military personnel and their dependents. The U.S. EPA has made testing recommendations for both residential structures and schools. For residential structures using a 2- to 7-day charcoal canister test, a level between 4 and 20 picoCuries per liter should lead to additional testing within a few years. No residential, school or childcare facilities are located at NWIRP McGregor; therefore, no radon testing was completed there.

Both McLennan and Coryell counties are classified by the United States Geological Survey (USGS) as Zone 3 radon area. Zone 3 areas are those with a predicted average screening level of less than two picoCuries per liter of air (pCi/l), compared to the U.S. EPA action level for radon of four pCi/l (U.S. Navy, 1996c).

Solid Waste

Federal and Texas laws provide for "cradle to grave" regulation of hazardous wastes. The legal framework for the Federal hazardous waste laws has been constructed in several steps, including the Solid Waste Disposal Act (SWDA) of 1965, RCRA, the SWDA Amendments of 1980, the Hazardous and Solid Waste Amendments of 1984 (HSWA), and even sections of SARA. Since RCRA was adopted as amendments to the earlier SWDA, the RCRA legislation defines all hazardous waste as a subset of "solid waste". Provisions applied to solid wastes also control hazardous waste regulation. RCRA also defines some materials as solid wastes but exempts them from regulation as hazardous waste, but defined hazardous waste is always first a solid waste.

The U.S. EPA is primarily responsible for implementing RCRA; however, Texas has received formal authorization to implement basic RCRA provisions, including responsibility for registering generators and licensing transporters and TSD facilities. Regulations developed based on the provisions of the Solid Waste Disposal Act of 1965, as amended by RCRA, require that Federal facilities comply with all Federal, state, and local requirements concerning the management and disposal of solid waste. Applicable to historical solid waste management at NWIRP McGregor, Section 211 of the Solid Waste Disposal Act, implemented by U.S. EPA regulations found at 40 CFR 240-241, pertains to the thermal processing of solid waste and the land disposal of solid wastes.

Texas has merged its RCRA authority with the on-going implementation of the Texas Solid

Waste Disposal Act (TSWDA). The TNRCC implements provisions of RCRA and the TSWDA in the State of Texas. The TSWDA generally starts by incorporating RCRA-defined hazardous waste into the state regulatory framework. Since the TSWDA regulates several types of waste, the TRNCC requires waste generators to classify their wastes, manage and dispose of them accordingly. The TSWDA establishes one hazardous and three non-hazardous waste classifications, each with different management requirements. Non-hazardous wastes in the State of Texas are defined as Class 1, 2 or 3 wastes ("industrial non-hazardous wastes") and must be managed appropriately.

In 1989, the Texas Water Commission (precursor agency to the TNRCC) completed the RCRA Facility Assessment (RFA) at NWIRP McGregor. The TNRCC identified a number of solid waste management units (SWMUs) that met the criteria for possible hazardous substance releases. The SWMUs identified by the RFA included the following active (pre-closure) and inactive solid waste landfills and solid waste disposal areas.

Solid waste was managed at two active landfills located within the boundaries of NWIRP McGregor. The Class III Landfill - East is a demolition waste landfill located south of the main plant roadway, opposite Area D ("D Landfill"). The Class II and Class III Landfill - West is a demolition and sanitary waste landfill located in Area M ("M Landfill"). Confidential documents were disposed of at the two paper incinerators located in Area C behind Building 300 (U.S. Navy, 1996c). Inactive landfills included a reported demolition landfill north of Area A, an area of unknown waste disposal southeast of Area E, a second demolition landfill in Area M, several land disposal areas, including a Class II landfill, and an old burn cage in Area S.

The solid waste management areas described above required no further action under the RCRA Corrective Action Program, although they are included with the CERFA-mandated, Phase II EBS investigation (Gray Areas Work Plan) described in more detail below. Sites found to require additional investigation as a result of the EBS process would be addressed accordingly under the Navy's Installation Restoration Program.

Solid waste management areas operated by private owners, not the control of the Department of the Navy, that may contain hazardous or toxic waste and are subject to additional investigation, include a pesticide dump in Area G and an asbestos landfill in Area L (U.S. Navy, 1996c). These areas are also discussed in detail in the sections below.

NWIRP McGregor also managed hazardous materials that were common in building structures or equipment. These hazardous materials usually did not create a health hazard unless disturbed during remodeling or demolition. Three common static hazardous materials were asbestos, lead-bearing paint, and polychlorinated biphenyl's (PCBs). Given the situation by which these materials become hazardous, i.e. during remodeling or demolition activities, they will ultimately become hazardous waste products and, as such, are addressed in the section covering hazardous waste management.

Hazardous Waste Management

Numerous regulations govern the generation, treatment, storage, and disposal of hazardous wastes. Activities conducted at NWIRP McGregor were subject to a variety of Federal, state, and local regulations. For example, regulations pursuant to Subtitle C of RCRA pertain to the treatment, storage, and disposal of hazardous wastes. Management of underground and above ground storage tanks also are addressed by RCRA. Pesticides and herbicides are potentially hazardous pollutants. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regulates all types of pesticides.

Hazardous materials were stored at NWIRP McGregor at non-permitted notice of registration (NOR) units, in satellite accumulation points (SAPs) and at miscellaneous concrete pad sites in operational areas. Non-permitted NOR units are allowed to store hazardous wastes for a period of less than 90 days without requiring a permit. SAPs are permit-exempt areas used to store small quantities of chemicals. The miscellaneous concrete pad sites were additional permit-exempt areas used for chemical storage in operation areas (U.S. Navy, 1996c). Sites designated as SAPs may store up to 55 gallons (208 liters) of each hazardous waste type collected at that site for an indefinite period of time. Upon reaching the 55-gallon (208-liter) limit, hazardous waste was then transferred to Area H (to one of the permitted storage igloos) to await off-site disposal.

Storage Tanks

Underground storage tanks are subject to Federal regulations within RCRA, 42 U.S.C. Section 6991 et seq., and U.S. EPA implementing regulations 40 CFR Part 280. The State of Texas regulates USTs under 31 TAC 334 Subchapter A; these regulations are enforced by the TNRCC. Additionally, the TNRCC regulates storage tanks that are considered a stationary source of volatile organic compounds (VOCs) under 31 TAC 115.112.

The state manages aboveground storage tanks of 1,100 gallons (4,160 liters) in size or larger under 31 TAC 334 Subchapter F. Aboveground storage tanks are also managed using the Flammable and Combustible Liquids code provisions of the National Fire Protection Association guidelines. Additionally, storage tanks are subject to regulations under the Clean Water Act (CWA) (33 U.S.C. Sections 1251-1578) oil pollution provisions (specifically 40 CFR Part 112). Operators at NWIRP McGregor were required to have an Oil and Hazardous Substances Contingency Plan to address spills and releases to minimize pollution.

The use of underground storage tanks at NWIRP McGregor has been minimal (U.S. Navy, 1996c). Most of the original buildings at the plant were heated by natural gas, eliminating the need for heating oil tanks, either above or below-grade. Further, vehicle fueling operations were centralized in Area E. There were four gasoline or diesel storage tanks located in Area E.

Three of these tanks have been removed and the fourth has been abandoned in place. The area has been remediated and has been approved for closure by the TNRCC (U.S. Navy, 1996c).

Two USTs were reported in Area D. The first of these was registered as Tank D-1, a 10,000 gallon (37,850 liter) steel tank formerly used to store diesel fuel. The tank was removed on July 14, 1993. The second UST located in Area D was reported to be north of Building 418. It was used to store either plating wastes or used oil. The status and contents of this tank are not known. Documentation of approved closure for the tanks in Area D is not available and the existing site conditions are not known (U.S. Navy, 1996c).

Historical documents reference USTs at Buildings 617 (Area F) and 1106 (Area L). One tank was reported, but not located, at Building F-617. This tank was reportedly associated with the flume discharge in Area F. Building 1106 was a boiler house. Blueprints of the building show five large USTs, presumably used to store fuel oil for the boilers. Although the tank area was located during the site survey, it could not be determined whether the tanks were still present. In all, six tanks could not be located and their status remained unresolved (U.S. Navy, 1996c).

One wastewater underground storage tank, associated with silver recovery, was located in Area M (U.S. Navy, 1995b) and is being addressed under other regulatory programs described above.

In addition, 87 aboveground storage tanks were identified as having been present at the plant. Of this total, 36 have been removed or are inactive. The remaining tanks are located in production areas and contain a variety of substances ranging from compressed gas, oil or organic solvents (U.S. Navy, 1996c). The status of these tanks is summarized by the environmental baseline survey.

Pesticide and Herbicide Usage

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) 7 U.S.C. Sections 136-136y, regulates the registration and use of pesticides. Pesticide management activities are subject to Federal regulations contained in 40 CFR Parts 162, 165, 166, 170, and 171.

Since 1962, pesticides and herbicides were used throughout the plant by a commercial pesticide contractor. Historical pesticide usage has not been recorded since an outside commercial applicator has been responsible for pesticide and herbicide applications under contract with the Maintenance Department (U.S. Navy, 1996c). It has been unnecessary for NWIRP McGregor to store pesticides or herbicides on-site.

Area G was operated by the Ciba-Geigy Corporation between 1947 and 1953. Ciba-Geigy Corporation produced pesticides, including benzene hexachloride (BHC), toxaphene, and dichloro-diphenyl-trichloroethane (DDT). Release conditions in soils have been identified in

Area G and are subject to the corrective action process under guidance by the TNRCC. Regulatory-required remedial action will be required by the responsible party (Ciba-Geigy Corporation). The level and extent of contamination and remediation required is the subject of long-term negotiations. Resolution of these issues is on-going (U.S. Navy, 1996b).

During the years 1948 to 1953, Texas A & M University conducted research and experimental farming at the Bluebonnet Farm on all acreage except in the industrial areas. The research and experimental farming performed included cotton production, eradication of weeds, wood rot, and pests and crop fertilizer, to name a few. Various organochlorine pesticides as well as a kerosene/herbicide mixture were applied to various parts of NWIRP McGregor. One area, the J.T. Davis farm, located between Areas M and L was treated with Diazinon for 7 months. Toxaphene at greater than normal concentrations was applied to all fields and immediately adjacent areas to control grasshoppers. The pasture areas were generally not treated with pesticides. Chlordane was applied to corn fields to control grubs. Mixtures of kerosene or diesel fuel and naphtha was applied to control the Johnson Grass in cotton fields. Other mixtures applied for the same purpose included diesel fuel and pentachlorophenol, oil-soluble dinitro, and M-233 Dalapon. These mixtures were applied on 1500 ac (607 ha) of land located immediately outside the southern portion of Area L. No information about the amount applied to land within Area L is known.

Asbestos

Asbestos containing materials (ACM) are regulated by the U.S. EPA and the OSHA. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the CAA, which established the National Emission Standards for Hazardous Air Pollutants (NESHAP) for asbestos. The NESHAP regulations (40 CFR Part 61, Subpart M) address the demolition or renovation of buildings with ACM. The Toxic Substance Control Act (TSCA) 15 U.S.C. Section 2601 et seq., and the Asbestos Hazard Emergency Response Act (AHERA) Public Law (P.L.) 99-519 and P.L. 101-637, provide the regulatory basis for handling ACM in kindergarten through twelfth grade school buildings. AHERA and OSHA regulations cover worker protection for employees who work around or remediate ACM. The state manages asbestos under the Texas Asbestos Health Protection Rules (Sections 295.31 through 295.71), which are administered by the Texas Department of Health.

Renovation or demolition of buildings with ACM has a potential for releasing asbestos fibers into the air. Asbestos fibers could be released due to disturbance or damage from various building materials such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other materials used for soundproofing or insulation. The condition of these materials determines whether the asbestos-containing materials may be hazardous.

A survey of existing buildings for asbestos-containing material (ACM) was performed at NWIRP McGregor in 1993. The results of that survey are summarized by a asbestos survey

report and by the environmental baseline conditions document (U.S. Navy, 1996c). Both friable and non-friable ACM were identified in numerous buildings at NWIRP McGregor.

In addition to the ACM building materials identified, an asbestos landfill in Area L is present as a result of operations of the Union Asbestos and Rubber Company during the 1950's. A separate EBS of Area L was conducted to document property conditions and lease restrictions that would allow property transfer (by lease) to proceed. The EBS of Area L documented that there are two abandoned, asbestos disposal pits present that have been fenced and marked with warning signs. The asbestos disposal area associated with the operations of Union Asbestos and Rubber Company is deed recorded as a SWMU and is located in the vicinity of the slab for former Building 1122 (Area L). The second disposal area is approximately 560 feet (171 m) long and is located in the vicinity of the slab for former Building 1129 (Area L). This area is not recognized as a SWMU and is not deed recorded. These disposal areas will be investigated as part of the Gray Areas Work Plan, under the Navy Installation Restoration Program.

Prior to property disposal, asbestos surveys will be performed to identify the presence, extent, and condition of all asbestos (friable and non-friable) at NWIRP McGregor. DOD policy is to abate or repair ACM before property disposal if the asbestos is damaged, friable, and accessible. The final determination regarding the disposition of ACM will depend on the overall disposal plan and any planned reuse of the building. ACM will not be removed for the sole purpose of eliminating asbestos. In addition to removal, management alternatives such as encapsulation are deemed an acceptable and cost-effective method for management of asbestos hazards. Information concerning ACM will be provided to potential property reuse organizations. Because ACM has been identified, OSHA requires that the property owner notifies employees, potential tenants, and existing tenants of the presence of and hazards associated with ACM.

Lead-Based Paint and Other Sources of Lead

Lead is toxic to the central nervous system and can cause restricted neurological development in infants and young children. The most common environmental exposure to lead in adults is through inhalation of dust particles containing lead. Lead originates from the combustion of fuel that contains lead and from industrial processes that use lead. Painted surfaces containing lead may release dust or may crack and peel. Lead-based paint fragments may be generated during sandblasting or other construction activities. Paint fragments containing lead can be easily ingested by children or contaminate surface soils and surface water runoff.

Concern arises regarding lead-based paint during construction activities (e.g., sanding) and chipping of paint. Paint chips on the ground may lead to leaching of the lead (and other metal constituents, e.g., cadmium) into surface water run-off and the potential contamination of shallow soils and surficial aquifers. Chipped or peeling paint can be found throughout NWIRP McGregor (U.S. Navy, 1996c). Waste containing levels of lead exceeding a maximum

concentration of 5.0 milligrams per liter (mg/l), as determined by the U.S. EPA Toxicity Characteristic Leachate Procedure (TCLP) is classified as hazardous. Disposal of this waste must take place in accordance with U.S.EPA and state hazardous waste management rules.

In 1973, the Consumer Product Safety Commission (CPSC) established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the Consumer Product Safety Act (P.L. 101-608, as implemented by 16 CFR Part 1303), the CPSC lowered the allowable lead level in paint to 0.06 percent. The Act also restricted the use of lead-based paints in non-industrial facilities. In 1989, the U.S. EPA established a clean up criterion for lead in soil of 500 to 1,000 parts per million total lead when the possibility of child contact exists. Specific clean up levels are based upon the characteristics of individual sites. The Lead-Based Paint Poisoning Prevention Act, 42 U.S.C. Sections 4821 et seq., as amended by the Residential Lead-Based Paint Hazard Reduction Act of 1992, requires that lead-based paint hazards in Federal housing facilities be identified and eliminated. In 1993, the Federal OSHA, under 29 CFR Part 1926, extended the permissible exposure limit for general industrial workers of 50 micrograms per cubic meter of air to include construction workers.

To ensure that any threat to human health and the environment from lead-based paint has been identified, the Residential Lead-Based Paint Hazard Reduction Act (Title X), effective January 1, 1995, and Navy policy require that a lead-based paint survey of high-priority buildings be conducted at Naval facilities. However, at NWIRP McGregor there are no high priority buildings so a lead-based paint survey has not been conducted.

Based on the age of the facilities, it is likely that most of the structures at NWIRP McGregor have been coated with lead-based paint at one time or another (U.S. Navy, 1996c). The two water towers were reportedly painted with lead-based paint which was later scraped or sandblasted prior to re-painting. Based on Navy policy, lead-based paint warning statements will be provided to recipients of the property prior to property transfer, in accordance with P.L. 102-550 Title X, Sections 1013 and 1018.

Two other potential sources of lead were identified during the environmental baseline survey. There is lead shielding used in the X-ray (nondestructive test) facility at Building 1228 (Area M) and a bullet trap behind Security Building 300 (Area C). Lead remaining in Building 1228 is believed to be within the building and not expected to present a risk of environmental contamination. The bullet trap behind Building 300 is considered a potential source of soil contamination. Elemental lead and lead alloys from bullets may be present in soil (U.S. Navy, 1996c).

In 1989, Hercules Aerospace (Alliant Techsystems, Inc.) conducted a lead-in-drinking-water survey. Eight bottled water coolers were removed, plumbing was replaced at one location, and one industrial plant faucet was labeled not for potable use. Coolers that contained lead concentrations above 15 parts per billion were replaced.

Polychlorinated Biphenyl's

Commercial PCBs are industrial compounds produced by chlorination of biphenyls. PCBs are used in electrical equipment, primarily in capacitors and transformers, because they are electrically nonconductive and are stable at high temperatures. PCBs persist in the environment, accumulate in organisms, and concentrate in the food chain. The disposal of these compounds is regulated under TSCA, 15 U.S.C. Sections 2601-2671, which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems. The U.S. EPA regulation 40 CFR 761 requires removal and proper disposal of all sources of PCBs containing 50 ppm or more. The state of Texas regulates PCBs under 30 TAC 330 Part I, with the disposal of PCBs regulated under 30 TAC 343.

PCB equipment at NWIRP McGregor is reported to have been limited to transformers associated with the electrical distribution system. Three small (10 KVA) pole-mounted units containing PCBs are present at Building 105 (Area A). One transformer (with 13 ppm PCB) is located at Building 100 (Area A). Three transformers at Building 106 (Area A) contain less than 10 ppm PCBs and three transformer near Building 300 (Area C) contain less than 50 ppm PCBs. In the area of Building 402 (Area D), transformers of unknown composition are present. However, an outside contractor has been hired to replace all PCB-containing transformers. No PCBs have been reported as being contained within the hydraulic equipment at NWIRP McGregor. All utilities will be PCB-free at the time of transfer (U.S. Navy, 1996c). In one area near Building 1140B, PCBs were detected at levels that exceed the state's clean up requirements. This site will be investigated under the Navy's Installation Restoration Program.

Medical/Biohazardous Waste

Current Federal regulations do not provide for regulation of medical wastes, but do allow states to individually regulate medical waste. The state of Texas regulates medical waste under TAC Title 25, Chapter 325, Subchapter Y, Medical Waste Management.

Potential sources of infectious waste at NWIRP McGregor were the medical facilities at Buildings 106 Area A) and 300 (Area C). Building 106 was originally constructed in 1943 and was operated as the base hospital until 1947 when it was sold to Texas A&M for housing (U.S. Navy, 1996c). After recapture in 1953, the building was used for office space and medical treatment areas. A small first-aid room is present in Building 106. Building 300 has always been the fire and security building throughout operational history and includes a medical examination room. Past medical waste generation and handling practices at NWIRP McGregor are not well documented. No documentation of medical waste disposal on-site was identified, although Area S has historically been used for waste disposal. Medical wastes generated were disposed by a licensed contractor (U.S. Navy, 1996c).

X-ray operations occurred at the non-destructive testing laboratory, Building 1228 (Area M) and silver-containing waste was generated. The wastewater discharge from the silver recovery system is discussed below. Medical sources of silver waste does not exist at NWIRP McGregor and no medical/Biohazardous wastes are generated at NWIRP McGregor.

Wastewater Treatment and Disposal

At the time of initial plant construction, all plant areas discharged to the wastewater treatment plant located in Area Q. When Area M was built, an Imhoff tank that discharges to two oxidation (stabilization) ponds was constructed for the industrial waste treatment of wastewater generated at Area M by the Air Force. The original wastewater treatment plant and approximately 33 ac (13 ha) was released to the City of McGregor in 1972. This original plant was replaced by a new treatment plant, that operates as a Publicly Owned Treatment Works (POTW) (U.S. Navy, 1997c). All of the developed plant property east of and including Area D remains tributary to the POTW. Sanitary sewers from Areas E, L, R and T were replaced with leach (tile) fields (U.S. Navy, 1996c). The plant has been issued a TNRCC wastewater discharge permit, No. 02335, which corresponds to the U.S. EPA NPDES permit No. TX0034321. This permit authorizes discharges to the following outfalls:

- Outfall 001 - Area M wastewater treatment system discharge to Station Creek and the Leon River. Up to 150,000 gpd (567,800 liters per day) of domestic sewage, boiler blowdown, cooling water and rinse water is permitted. Discharge from the silver recovery system was also added with the concurrence of the TNRCC. This outfall does not discharge except during periods of relatively heavy rainfall.
- Outfall 002 - Area F wastewater pond which discharges to Harris Creek and the South Bosque River. Up to 25,000 gpd (94,600 liters per day) of process water, low volume wastes and stormwater are permitted. As with Outfall 001, this outfall typically discharges only during periods of heavy rainfall.
- Outfall 102 - Area F process water discharge to a wastewater pond located in Area F. Up to 10,000 gpd (37,900 liters per day) of process water are permitted; this outfall has been inactive since operations ceased.

NWIRP McGregor has been in compliance with the terms of the NPDES permit except for problems with silver concentrations at Outfall 001 associated with discharge from the silver recovery system located at Building 1228 (Area M). These discharges were intermittent since discharge from Outfall 001 occurred only during seasonal heavy rainfall; otherwise the discharge evaporated from the oxidation ponds before reaching the discharge point.

Area D was the only manufacturing area serviced by the City of McGregor POTW. An industrial pretreatment permit was not apparently issued to the plant by the City and no notices

of violation were detected during the environmental baseline survey (U.S. Navy, 1996c).

All areas of NWIRP McGregor have had wastewater treatment systems since the time of construction. In general, discharge limitations have been maintained. The collection system serving the eastern portion of the plant was deteriorated and has since been slip-lined.

Oil/Water Separators

One oil/water separator was included by the environmental baseline study (U.S. Navy, 1996c). This unit is located in the southeast corner of the maintenance garage in Building 510 (Area E). The unit appears to be a single-chamber separator and discharges to the leach field serving Area E. The waste oil was periodically removed and stored in Area E pending off-site recycling or disposal (U.S. Navy, 1996c).

Investigations and Source Areas of Hazardous and Toxic Materials

At the beginning of the environmental regulatory movement, initial site investigations at NWIRP McGregor were conducted by the operator on behalf of the Navy to meet the requirements of the RCRA Part B hazardous waste management permit application. In 1989, the Texas Water Commission (precursor agency to the TNRCC) completed the RCRA Facility Assessment (RFA) at NWIRP McGregor. The purpose of the RFA was to identify SWMUs with known or potential hazardous substance releases. The RFA consisted of a records search and facility inspections. The TNRCC identified 17 solid waste management units (SWMUs) that met the criteria for possible hazardous substance releases, resulting in the generation of hazardous wastes. The RFA also documented RCRA units that required a permit or regulation, RCRA units that required a Notice of Registration (NOR), SWMUs not owned by the Navy, and areas with possible soil and groundwater contamination. The SWMUs of the RFA are listed below.

- Plant Roads
- Imhoff Wastewater Treatment System - Area M
- In Situ Wastewater Treatment System - Area T
- Area F - East Settling Ponds (closed)
- Area M - North Receiving Ponds
- Class II and III Landfill West (near Area M)
- Class III Landfill - East (south of Area D)
- Acid Contamination in Area R
- Landfill and Ponds within Area S
- Area A Retired Rubble Landfill
- Class II Landfill - Area S
- Open Dumping Site Southeast of Area E
- Evaporation Ponds Area M Between Buildings 1217 and 1227

- Area G Pesticide Dump
- Area H Igloo 800-5

Of the SWMUs identified by the RFA in 1991, six SWMUs were determined to require additional investigation. The remaining sites required no further action under the RCRA Corrective Action Program.

A RCRA Facility Investigation (RFI) was recommended to be performed by the Navy to characterize the nature and extent of soil and groundwater contamination (TWC, 1989c). Two sites were added to the initial six sites recommended for additional investigation so that eight units are part of the RFI (U.S. Navy, 1994b).

During initial RFI investigations conducted in 1992 and 1993, soil and groundwater samples were collected in the following eight areas:

- RFI Unit No. 1 - Area S, Explosives Classification and Disposal
- RFI Unit No. 2 - Area M, X-ray Effluent Receiving Ditch
- RFI Unit No. 3 - Area F, West Settling Ponds
- RFI Unit No. 4 - Area R, Acid Contamination
- RFI Unit No. 5 - Area M, Evaporation Ponds
- RFI Unit No. 6 - Area G, Pesticide Dump
- RFI Unit No. 7 - Area M, Conversion Coating Tank and,
- RFI Unit No. 8 - Area F, Diesel Contamination Site (U.S. Navy, 1994b).

Since that time, RFI Unit No. 6 (Area G, Pesticide Dump) has been the subject of alternative, on-going investigations and remedial action negotiations between the Navy and the former Area G operator. A Phase II RFI was recommended for the remaining seven units based on the results of the initial RFI. The seven units proposed for further investigation by the Navy did not include Area G since this area is assigned to an alternative program (CERCLA) and responsibility for investigation and clean up is potentially shared with the former operator.

The purpose of the Phase II RFI is to delineate the extent of soil and groundwater contamination that has occurred through the release of waste at seven RFI units. The Phase I RFI investigations performed by the Navy began in 1992 and have continued through 1997. During this period, soil has been sampled at each SWMU and 50 groundwater wells have been installed and sampled. A Phase II RFI was designed to be of sufficient scope to provide the detail necessary to support the design of necessary corrective action measures or obtain closure under the Texas Risk Reduction Standards for hazardous site closures. The Work Plan for the Phase II RFI is being implemented for RFI Unit No.1 (Area S) in 1998. The results of the Phase II site investigations conducted at Area S will be used to help define the appropriate level of additional investigations at the other RFI units (U.S. Navy, 1997a).

A summary of the units investigated during the RFI process performed by the Navy is provided below. In addition, Table 3-6 summarizes the existing regulatory programs, site investigations and closure or remediation status of the regulated areas at NWIRP McGregor.

Area S, Explosives Classification and Disposal (RFI Unit No. 1). Area S had been used since 1942 as the official burning ground for waste and off-specification materials at the plant. Materials reportedly burned included waste explosives, propellants and organic solvents (U.S. Navy, 1996c). Soil contamination was determined to be present at concentrations below the industrial Medium Specific Concentrations (MSCs) established for groundwater protection. However, volatile organic compounds and semi-volatile organic compounds in groundwater were above the groundwater MSC. Additional groundwater investigations have been proposed and will be implemented in 1998 (U.S. Navy, 1998b).

Area M, X-ray Effluent Receiving Ditch (RFI Unit No. 2). Effluent from a silver recovery system associated with X-ray film development was discharged to this ditch. Soils exceeded EP Toxicity levels for silver (U.S. Navy, 1996c). No significant level of groundwater contamination in this area was identified. Soils in one area exhibited silver contamination which was recommended for removal (U.S. Navy, 1994b). Table 3-6 illustrates the status of investigations and closure recommendations.

Area F, West Settling Ponds (RFI Unit No. 3). Wastewater generated at Buildings 611, 614, 617, and 620 (Area F) was discharged to these ponds. Waste constituents contained TATB, TCTNB, trichlorobenzene (TCB), toluene, AN and AP (U.S. Navy, 1996c). No soil contamination above MSCs was detected. However, chlorinated solvents were detected in groundwater at a maximum of three locations; repeated sampling resulted in dissimilar outcomes. These ponds were closed by the Texas Water Commission (TWC) in 1985 and have not been used since that time. Additional sampling was recommended (U.S. Navy, 1994b). Table 3-6 illustrates the status of investigations.

Area R, Acid Contamination (RFI Unit No. 4). Acid etching of steel motor cases was occasionally performed in this area of static testing. Reportedly 15 to 20 gallons (57 to 76 liters) of acid-bearing waste from this operation was poured on the ground near Building 1601 (Area R) (U.S. Navy, 1996c). No groundwater contamination above MSC levels were detected. Some soil samples contained nickel, zinc and barium concentrations above background levels. Additional soil sampling was recommended; Table 3-6 illustrates status of existing investigations.

Area M, Evaporation Ponds (RFI Unit No. 5). Large quantities of wastewater were generated from propellant processing operations in Buildings 1217 and 1227 (Area M) and were discharged to two small ponds located between these two buildings. Overflow

TABLE 3-6 NWIRP McGREGOR INSTALLATION RESTORATION PROGRAM

Site	Corrective Action Program	Begin Investigation	Complete Investigation	Percent Complete	Comments
RFI Unit #1	RFI/CMS	21 SEP 91	1998	Phase I - Complete Phase II - 90%	VOS and Metals have been identified as chemicals of concern at this unit. Groundwater has likely been impacted. Closure will be applied for under Risk Reduction Standard 3 and a groundwater compliance plan will be implemented.
RFI Unit #2	RFI/CMS	21 SEP 91	1998	Phase I - Complete	This unit was completely characterized in Phase I. Risk assessment and reporting will be accomplished following Phase II guidelines.
RFI Unit #3	RFI/CMS	21 SEP 91	1998	Phase I - Complete	VOCs have been identified in groundwater, but they are predominantly upgradient of the unit. Phase II investigation activities will be coordinated with the Gray Areas Work Plan.
RFI Unit #4	RFI/CMS	21 SEP 91	1998	Phase I - Complete	This unit was completely characterized in Phase I. Risk assessment and reporting will be accomplished following Phase II investigations.
RFI Unit #5	RFI/CMS	21 SEP 91	1998	Phase I - Complete	Phase II investigation activities will begin. VOCs and metals have been identified in groundwater and soil.
RFI Unit #6	RFI/CMS	Investigation of this Unit is being managed by a PRP which leased the facilities during the mid to late 1950s.			
RFI Unit #7	RFI/COMS	21 SEP 91	1998	Phase I - Complete	Phase II investigation activities will begin. VOCs and metals have been identified in groundwater and soil. Extent of contamination will be assessed during Phase II.
RFI Unit #8	RFI/CMS	21 SEP 91	1998	Phase I - Complete	Phase II investigation activities will begin. Phase I did not identify petroleum contamination associated with this unit, but VOCs were identified in the upgradient well. Phase II activities will be coordinated with the Gray Areas Work Plan.
Bldg. 1238 (Area M)	Process Closure	19 AUG 96	1998	100%	Final contamination assessment report has been submitted. Currently awaiting TNRCC comments and/or approval for closure.
Groundwater Monitoring (Area E)	UST Program	18 MAR 91	1998	100%	Final closure report has been approved by TNRCC. No further action is required.
Gray Areas Work Plan	Property Disposal under CERCLA as amended by CERFA	18 NOV 96	1998	20%	Gray Areas Work Plan is complete and comments are being addressed. Investigation of 175 acres of concern will begin pending approval and allocation of funds.

Source: U.S. Navy, 1998b

from these ponds was piped to a drainage ditch tributary to Station Creek (U.S. Navy, 1996c). Metals contamination (chromium, lead, zinc, and arsenic) were detected in soils in the vicinity of the evaporation ponds, although no significant concentrations of metals in groundwater were detected. One groundwater well yielded samples that contained chlorinated solvent contamination. Additional soil and groundwater investigations were recommended (U.S. Navy, 1994b). Table 3-6 illustrates status of existing investigations.

Area M, Conversion Coating Tank (RFI Unit No. 7). Spent plating and phosphate treatment solutions were reportedly discharged to a treatment tank behind Building 1206 (Area M) where hexavalent chromium was reduced to its trivalent form using sodium bisulfate. Wastewater from process rinse tanks and effluent from the treatment tank were discharged directly to a drainage ditch tributary to a stock pond (U.S. Navy, 1996c). No contamination above groundwater MSCs was detected in monitoring wells installed at the site. Metals in soils were above background levels. Additional soil investigations were proposed to delineate the extent of contamination and soils samples are recommended in the area of the stock pond (U.S. Navy, 1994b). Table 3-6 illustrates status of existing investigations.

Area F, Diesel Contamination Site (RFI Unit No. 8). Fuel oil was stored in an above-ground 25,000 gallon (94,632 liter) tank east of Building 603 (Area F). A concrete tank saddle and a significant amount of diesel contamination was identified in a trench dug in this area (U.S. Navy, 1996c). No soil or groundwater contamination above applicable MSCs was detected at this site (U.S. Navy, 1994b). Table 3-6 illustrates status of existing investigations.

Site investigations and remedial evaluations for Area G (RFI Unit No. 6) have been performed by the operator, Ciba-Geigy, and the Navy beginning in 1984 and have continued through 1997. The investigations of Area G are being managed under the CERCLA program. A description of this RFI unit is provided below.

Area G, Pesticide Dump (RFI Unit No. 6). A pesticide dump area approximately 60 feet by 600 feet (18 m by 183 m) was reportedly used by the Ciba-Geigy Corporation for disposal of pesticides including DDT, toxaphene, parathion, aldrin-diieldrin, chlordane-heptachlor, BHC-lindane and endrin (U.S. Navy, 1996c). Ciba-Geigy is a potentially responsible party for DDT and other associated contamination in Area G and has participated with the Navy in the investigation process (U.S. Navy, 1996c). This unit was investigated in conjunction with on-going negotiations with Ciba-Geigy Corporation. Results are published separately (U.S. Navy, 1994b). Table 3-6 illustrates status of existing investigations.

To facilitate the closure of NWIRP McGregor, Alliant Inc., the previous facility contractor, had

launched an investigation of the RCRA permitted and non-permitted NOR units, satellite accumulation areas, pits, and other operational and waste or container management (drum storage) areas. One of the activities of the closure is the characterization and closure of the non-permitted and permitted notice-of-registration units. The NORs are located throughout the facility and consist of secondary containment structures that have been used to store waste containers for time periods of less than 90 days. In 1996, the closure plan for these units was submitted to the TNRCC for concurrence.

The closure of NWIRP McGregor will not affect the implementation of the Phase II RFI and remediation of SWMUs identified during the RFA. Site investigations and remedial action will continue at NWIRP McGregor until the property is remediated and corrective action is complete (U.S. Navy, 1996c). The formal RCRA closure procedure for the RCRA permitted units at NWIRP McGregor, including the development and implementation of a RCRA Closure Plan, is required for each permitted storage, treatment or disposal unit. Although closure and remediation of the RCRA-regulated units would be conducted under RCRA, the CERCLA process, through the Navy's IRP, would proceed concurrently to address non-RCRA sites (identified by the EBS process). In the state of Texas, property identified and receiving closure concurrence of the TNRCC is transferable under the 120(h)(4) process. Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process.

An EBS is required by DOD policy for all leases, easements, transfers, sales or acquisitions of real property. Pursuant to CERCLA, as amended by CERFA, the Navy has conducted two separate Environmental Baseline Surveys at NWIRP McGregor to support separate property leasing agreements. A base-wide environmental study (or EBS) was conducted to document the physical condition of the real property at NWIRP McGregor resulting from the storage, use and disposal of hazardous substances, petroleum products and their derivatives. An Environmental Baseline Survey for Lease (EBSL) was prepared based on this EBS for the subleasing of surface land, excluding structures, to various individuals for agricultural use. This agricultural use lease is a continuance of a leasing program that has been in effect for over 30 years. A finding of suitability to lease (FOSTL) was issued to continue this historical agricultural leasing program.

The EBS process, based on CERFA requirements, addresses potentially contaminated areas in terms of parcel or area descriptions. For purposes of CERFA compliance, the environmental baseline survey conducted to document conditions at McGregor divided NWIRP McGregor into seven area or property classifications. The initial ranking criteria for the properties classified include the following:

- areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas (Category 1/White);
- areas where only storage of hazardous substances or petroleum products has occurred (but no release, disposal, or migration from adjacent areas has occurred) (Category 2/Blue);
- areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action (Category 3/Light Green);
- areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken (Category 4/Dark Green);
- areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, removal and/or remedial action are under way, but all required remedial actions have not yet been taken (Category 5/Yellow);
- areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but required response action have not yet been implemented (Category 6/Red);
- areas that are unevaluated or require additional evaluation (Category 7/Gray).

Property in Categories (1) through (4) are eligible for deed transfer under CERCLA, as amended. Properties in Categories (5) and (6) may be considered for transfer upon concurrence from the TNRCC and/or the U.S. EPA in accordance with CERCLA 120(h)(3)(C). Properties in Category 7 will not be considered for transfer until the necessary environmental actions have been taken and the property has been reclassified in accordance with CERCLA and DOD guidance.

Figures A-1 through A-12, located in Appendix A, summarize each operation area and the CERFA-required ranking criteria assigned at NWIRP McGregor (U.S. Navy, 1996c).

Properties at NWIRP McGregor that do not meet the definition of "uncontaminated" within the meaning of CERFA, but are still eligible for transfer, include categories 2/Blue and 3/Light Green. Properties assigned to category 2/Blue are shown below:

- Building 103 (Area A) -- Former Information Services and Employment Office

- Facilities 2306 and 2309 (Area Z) -- Booster Pump Station and associated Water Storage Tank
- Facility 2320 (Area Z) -- Former Fire Station No.2 and adjacent concrete plant

Properties assigned to category 3/Light Green are shown below:

- Building 100 (Area A) -- Administration
- Building 106 (Area A) -- Photography and Print Shop
- All plant roadways and parking areas and railroad right-of-ways are classified as 3/Light Green unless available information suggests another classification is appropriate.

Properties where contamination was above action levels and appropriate remedial actions have been taken include Category 4/Dark Green and Category 5/Yellow. There were no properties classified as 5/Yellow at NWIRP McGregor.

The following property was classified as Category 4/Dark Green:

- Area E Fuel Farm

Properties which require remedial action or other action that has not yet been taken (Category 6/Red) include the following properties at NWIRP McGregor:

- Building 603 (Area F) -- Boiler Room/Change House
- Building 702 (Area G) -- Line Office/First Aid
- Building 703 (Area G) -- Change Room/Lunch Room
- Building 704 (Area G) -- Boiler House
- Building 707/708 (Area G) -- Evaporator/Crystallizing Building
- Building 711/712 (Area G) -- Evaporator/Crystallizing Building
- Building 713/714 (Area G) -- Evaporator/Crystallizing Building
- Building 715/716 (Area G) -- Evaporator/Crystallizing Building
- Building 717/718 (Area G) -- Evaporator/Crystallizing Building
- Building 719 (Area G) -- Unknown
- Building 720 (Area G) -- Container Storage
- Building 721 (Area G) -- Pump House
- RFI Unit No. 1 -- Area S -- Explosives Classification and Disposal Area (Open Burn Area)

The majority of the NWIRP McGregor property has been classified as Category 7/Gray. Since this is the case, most of NWIRP McGregor will not be considered for transfer until the necessary environmental actions have been taken and the property has been reclassified. For

this reason, additional classification actions are necessary and are in the process of being implemented.

A separate EBS of Area L was conducted to document property conditions and lease restrictions that would allow interim property transfer (by lease) of Area L to proceed. Area L was classified as also Category 7/Gray. Prior to property transfer investigations will be conducted and clean up performed. However, this EBS found the Area L property to be suitable for lease under the stipulations outlined in the Finding of Suitability to Lease (FOST) and accompanying lease restrictions.

A Phase II EBS Work Plan is being developed and is expected to be finalized during the first or second quarter of 1998 (U.S. Navy, 1997b). The Phase II EBS work plan will describe additional site investigations required to further characterize areas that have not been evaluated or those areas that require additional evaluation prior to classification (Category 7/Gray). The Phase II EBS Work Plan is known as the Gray Areas Work Plan and will optimize field work and available funds by combining appropriate elements of the Phase II RFI and the Grey Areas Work Plan in those areas that are common to both investigation programs. Although closure and remediation of these RCRA-regulated units would be conducted under RCRA, the CERCLA process, through the Navy's IRP, would proceed concurrently to address the non-RCRA regulated sites.

A second, base-wide EBS was performed in 1997 by Alliant Inc. in order to document conditions at lease termination (Alliant, 1996a). This EBS document incorporated the investigations performed by the operator in the NOR unit areas. All EBS documents and the results of previous investigations were used to assist in the development of the Gray Areas Work Plan. The TNRCC is in the process of reviewing and commenting on the Gray Areas Work Plan. Site investigations will commence after approval is given by the TNRCC and as funding becomes available.

During late Spring/early Summer 1998, sampling of surface and shallow groundwater wells in and around the NWIRP McGregor property boundary indicated the possible presence of perchlorate. Ammonium Perchlorate was used as an oxidizer in solid propellant engine testing at NWIRP in the past, and would be considered the primary source of the perchlorate. Perchlorate has recently been identified as a potential contaminant in drinking water. Perchlorate is of concern because of the existing uncertainties in the toxicological database documenting its health effects at low levels in drinking water. An interagency committee (Interagency Perchlorate Steering Committee, "IPSC") has been formed to address a number of issues dealing with perchlorate such as analytical methods, health effects, ecological impact and treatment technologies. The Navy is working very closely with the IPSC, EPA, and TNRCC to identify, characterize and assess impacts that may be associated with the possible presence of perchlorate (U.S. Navy, 1998e).

3.1.7 Historical and Archeological Resources

In compliance with Sections 110 and 106 of the National Historic Preservation Act of 1966 (36 CFR Part 800) cultural resources surveys have been performed to identify and document properties at NWIRP McGregor that may be eligible for listing in the National Register of Historic Places (NRHP). A historic resources survey was conducted at NWIRP McGregor between August 1995 and February 1996. This survey was conducted in accordance with the standards and guidelines of the State Historic Preservation Office (SHPO - the Texas Historical Commission) and the National Park Service, U.S. Department of the Interior. Research efforts identified 244 properties at NWIRP McGregor, of which 191 survive, that were potentially eligible for the NRHP. Within the group of 191 historic resources, all were Military-Related Property Types: Administrative Facilities, Production Facilities, Research and Development Facilities, Utilities and Infrastructure Facilities, Operational Support Facilities, Shipping and Storage Facilities, and Landscape Elements. Three of these categories - Infrastructure and Utility Facilities, Operational Support Facilities, and Shipping/Storage Facilities - contain 159 of the 191 extant historic resources. The total number of historic resources are distributed as follows:

<u>Property Subtype</u>	<u>Number</u>
Administration Facilities	3
Utilities/Infrastructure Facilities	16
Operational Support Facilities	15
Research/Development Facilities	8
Production Facilities	20
Shipping and Storage Facilities	128
Landscape Elements	<u>1</u>
Total	191

The relative significance and integrity of each of the properties were evaluated for their contributions to the major historical themes, events, and trends that affected the development of NWIRP McGregor. While the industrial facility's historical significance derives principally from its association with ordnance production during World War II, the plant also played a supportive role in weapons manufacturing and research throughout much of the Cold War. In this context, the assessments for architectural integrity and historic or architectural significance resulted in a recommendation that four individual properties (Buildings 105, 300, 603, and 1201) and a historic district (Area H - Buildings 8001 through 8064) retained sufficient integrity and met at least one of the four NRHP Criteria to be considered eligible for the NRHP (U.S. Navy, 1996a). The locations of the eligible buildings are shown on Figures 1-4, 1-7, 1-9, and 1-11. Photographs of some of the eligible buildings are also contained on Figures 1-14 through 1-23.

The SHPO reviewed the historic resources survey and concurred with the survey's principle recommendations. However, the SHPO determined that although several properties were initially determined ineligible due to compromised integrity or lack of significance, they should not go unrecognized for their part in the make-up of the physical plant. Therefore, the SHPO determined that the following properties were also eligible for the NRHP: Buildings 106, 404, 601, 602, 711, 712, 1237, 2301, 2308, and 2309 (see correspondence in Section 5.0 - THC letter of October 3, 1996). The locations of these eligible buildings are shown on Figures 1-4, 1-5, 1-6, 1-7, 1-8, and 1-11. Photographs of some of these eligible buildings are also contained on Figures 1-14 through 1-23. Because the proposed action being considered could result in the transfer of the eligible properties to other entities, the SHPO recommended that a Memorandum of Agreement (MOA) be prepared including appropriate deed covenants providing for SHPO review of character altering exterior alternations to those eligible buildings which could potentially be transferred. The SHPO also recommended that prior to any demolition or transfer, the Navy complete and submit Historic American Buildings Survey Level III (HABS Level III) survey documentation for each property type. This documentation would create a permanent record of the buildings and structures that played important roles in the successful operation of NWIRP McGregor. This documentation will mitigate possible impacts from potential alternations or demolition to eligible properties. The HABS Level III documentation was completed in September 1997 and has been accepted by the SHPO as completion of the Section 106 process (see correspondence in Section 5.0 - THC letters of September 16 and November 6, 1997).

Additionally, a reconnaissance survey for archeological resources was conducted in October and November 1995. The field reconnaissance resulted in the discovery and preliminary recording of 28 archeological sites. Of these, 24 were historic (41CV1604-41CV1609S; 41ML239-41ML242; 41ML245-41ML253; and, 41ML255-41ML259); three contained both historic and prehistoric materials (41CV1610; 41ML243; and 41ML244); and one was all prehistoric (41ML254). The one all prehistoric component (41ML254) and 13 of the other 27 historic components (41CV1604, 41CV1606, 41CV1609, 41CV1610, 41ML239, 41ML240, 41ML241, 41ML243, 41ML245, 41ML247, 41ML248, 41ML252, and 41ML253) were recommended as being potentially eligible for listing in the NRHP (Prewitt and Associates, 1996). The SHPO reviewed the archeological survey report and recommended that, if the property is to be transferred, the Navy and the acquiring entity agree to transfer the NWIRP McGregor property with a protective covenant that includes adequate conditions to ensure the preservation of the property's significant historic features (see correspondence in Section 5.0 - THC letter of June 24, 1996). The Navy would incorporate protective covenants for both historic and archeological resources into the MOA which will be completed prior to any permanent transfer of the property (U.S. Navy, 1998d).

3.2 BIOLOGICAL RESOURCES

3.2.1 Vegetation

The NWIRP facility at McGregor is located within an area where two physiogeographic regions merge together. These include the Blackland Prairie and Cross Timbers and Prairies regions. Undisturbed portions of the Blackland Prairie region contain native climax vegetation comprised of a variety of grasses including little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), buffalograss (*Buchloe dactyloides*), and Texas grama (*Bouteloua rigidiseta*). Except for a few sporadic upland hardwood stands, forested areas of the Blackland Prairie are usually limited to riparian habitat adjacent to and within floodplains of area streams and lakes. Some of the more common riparian hardwood species in the region include pecan (*Carya illinoensis*), cedar elm (*Ulmus crassifolia*), willow (*Salix* spp.), Eastern cottonwood (*Populus deltoides*), and American elm (*Ulmus americana*) (Gould, 1975). Approximately 98 percent of the Blackland Prairie has been cultivated to produce cotton, sorghum, corn, wheat, and forages. Since the 1950's, pasture and forage crops for the production of livestock have increased.

Climax vegetation in the Cross Timbers and Prairies region consists of big bluestem, little bluestem, Indian grass, switchgrass, Canada wildrye (*Elymus canadensis*), sideoats grama (*Bouteloua curtipendula*), blue grama (*B. gracilis*), hairy grama (*B. hirsuta*), Texas wintergrass (*Stipa leucotricha*), and buffalograss. Invader species include hairy tridens (*Erioneuron pilosum*), Texas grama, red lovegrass (*Eragrostis secundiflora*), wild barley (*Hordeum* spp.), three-awn grass (*Aristida* spp.), fringed-leaf paspalum (*Paspalum setaceum* var. *Ciliatifolium*), and tumble windmillgrass (*Chloris verticillata*). Past mismanagement and cultivation have resulted in the uplands being covered by oaks (*Quercus* spp.), mesquite (*Prosopis glandulosa*), and juniper (*Juniperus* spp.) with mid- and shortgrass understories. The bottomland trees include pecan, oaks, and elms. Characteristic understory shrubs and vines include skunkbush (*Rhus aromatica*), saw greenbriar (*Smilax bona-nox*), gum bumelia (*Bumelia lanuginosa*), and poison ivy (*Toxicodendron radicans*). Approximately 75 percent of the Cross Timbers and Prairies region is used as range and pasture (Hatch et. al., 1990).

The U.S. Fish and Wildlife Service (USFWS), with assistance from the Southern Division, Naval Facilities Engineering Command, developed a Wildlife Management Plan for NWIRP McGregor that was implemented in 1989. A preliminary resource inventory of the property was conducted by the USFWS for development of the management plan. The inventory grouped the habitat into the following categories: 1) native brush along small streams and draws, 2) pastureland, 3) cropland, 4) rangeland, 5) lawns, and 6) restricted industrial areas. At the time of implementation of this management plan, row crop leases comprised approximately 40 percent of the total acreage of the site. The resource inventory provided a description of the vegetation conditions for the native brush area only. Vegetation observed by the USFWS in

these areas associated with small streams and draws included Eastern cottonwood, hackberry/sugarberry (*Celtis laevigata*), and willow species.

A field reconnaissance was performed in October 1995 to identify the existing conditions at NWIRP McGregor (Turner Collie & Braden, 1995). Figure 1-3 identifies the different facility designated areas and the agricultural leases that comprise the pastureland, cropland, and rangeland areas. The general plant communities include the following:

- wildlife management areas - riparian woodland; upland habitat
- pastureland
- rangeland
- cropland
- maintained areas - industrial areas; facility administration

Overstory vegetation within the riparian woodlands in the wildlife management areas consists of Eastern cottonwood, sugarberry, willow, dogwood (*Cornus* sp.), American elm, and a few isolated specimens of cedar elm. Mid-story vegetation was extremely limited to non-existent in most of the riparian woodlands. In riparian areas where some mid-story vegetation occurs, the principal vegetation observed includes vine species (*Muscadine* and *Mustain* spp., *Rubus* sp., *Toxicodendron* sp., *Smilax* sp. and *Campsis* sp.), and some saplings of the tree species identified above. Predominant understory vegetation within and immediately adjacent to the riparian woodlands and streams includes bluestem species (*Andropogon glomeratus* and *A. Ischaemum*), goldenrod (*Solidago* spp.), sumpweed (*Iva* sp.), great ragweed (*Ambrosia trifida*), witchgrass (*Dicanthelium* sp.), broomweed (*Xanthocephalum dracunculoides*), cattail (*Typha* sp.), johnson grass (*Sorghum halepense*), spikerush (*Eleocharis* sp.), cocklebur (*Xanthium* sp.), seedbox (*Ludwigia* sp.), alligator weed (*Alternanthera philoxeroides*), and barnyard grass (*Echinochloa* sp.).

Common plant species observed within the upland habitat of the wildlife management areas include King Ranch bluestem, johnson grass, sumpweed, mesquite, juniper, sugarberry, willow, bermuda grass (*Cynodon dactylon*), eryngo (*Eryngium leavenworthii*), goldenrod, bushy beard bluestem, gayfeather (*Liatris* sp.), broomweed, sunflower (*Helianthus* sp.) osage-orange (*Maclura pomifera*), prickly pear (*Opuntia* sp.), rat-tail smutgrass (*Sporobolus indicus*), great ragweed, three-awn grass, dallis grass (*Paspalum dilatatum*), and fleabane (*Erigeron* sp.).

The pastureland and rangeland areas at NWIRP McGregor are primarily open grasslands vegetated with a variety of the native grass species as identified above for the wildlife management areas. Crops grown in the leased cropland areas primarily include grain, oats, corn, and hay. The industrial and facility administration areas have been maintained and manicured (i.e. mowing). Similar to other open grasslands at the site, portions of the industrial areas are vegetated with native grasses. The facility administration area is vegetated with a combination of bermuda grass, some native grasses, and live oaks.

Existing agricultural leases stipulate that the pastures, rangelands and cropland fields (used for temporary grazing only) will be grazed at a rate to maintain adequate cover for soil protection both in quantity and quality of desired vegetation. The leases stipulate further that areas will not be overgrazed and concentration areas will be rotated to prevent damage to the soil or established vegetation. In addition, lessees are required to maintain all grassed waterways, terraces, ditches and other structural conservation practices within leased areas to the original construction specifications as provided by the NRCS (formerly the SCS).

Additionally, during February 1997, a field survey was conducted to determine the potential for the presence of native prairie grasses at NWIRP McGregor. Only a few areas at the facility have been set-a-side for wildlife or have any potential for native prairie species such as little bluestem (*Schizachyrium scoparium* var. *frequens*), indiangrass (*Sorghastrum nutans*), sideoats grama (*Bouteloua curtipendula*), or switchgrass (*Panicum virgatum*). Four potential areas were found. Three areas had not been recently disturbed by mowing, grazing, or farming: Area G, sections of Area L, and parts of Area M. The fourth area noted was those along the existing railroad tracks. All areas surveyed had similar vegetation. Johnson grass (*Sorghum halepense*), dropseed (*Sporobolus asper*), silver bluestem (*Bothriochloa saccharoides* var. *torreyana*), three-awns (*Aristida* spp.), and switchgrass were observed. Johnson grass, dropseed, and silver bluestem were the dominant species. Each area had a mixture of these dominant species. The highly desirable native grass species (little bluestem, indiangrass, or sideoats grama) were not found during this field survey. Some small areas of switchgrass were found, but none where it was the dominant species. All areas appeared to have typical vegetation of abandoned areas. None of the reviewed areas appeared to have vegetation typical of an undisturbed native prairie (TC&B, 1997).

3.2.2. Wildlife

Terrestrial

The diversity of the undeveloped areas at NWIRP McGregor is conducive to the utilization of these areas by a variety of terrestrial species including birds, mammals, amphibians, and reptiles. As presented in Section 3.2.1., a previous habitat inventory conducted by the USFWS identified six primary habitat types that exist at the facility. Field observations conducted for the development of the EA confirmed this information.

Previous field observations by Texas Parks and Wildlife Department (TPWD) and USFWS personnel indicated that various wildlife species occur at the NWIRP facility. Some of the more common species observed by resource agency personnel include bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaidura macroura*), eastern cottontail (*Sylvilagus floridanus*), and whitetail deer (*Odocoileus virginianus*), among others. Several wildlife species were observed during the field reconnaissance conducted for the EIS development. Species observed

include great blue heron (*Ardea herodias*), greathorned owl (*Bubo virginianus*), black vulture (*Coragyps atratus*), a small raptor resembling a kestrel (*Falco* sp.) or falcon (*Falco* sp.), and a coyote (*Canis latrans*). Several monarch butterflies (*Danaus plexipus*) were observed in one of the riparian wildlife management areas. Of special note was the observation of a large raptor in Area S. This bird's markings resemble those of an immature golden eagle (*Aquila chrysaetos*); however, due to the brief period of observation and viewing distance, identification of the raptor could not be confirmed. Additional information regarding the potential occurrence of a golden eagle at the facility is included below. Wildlife species observed by facility personnel include wild turkey (*Meleagis gallopavo*), dove, and quail. Table 3-7 through Table 3-10 are partial lists of birds, mammals, reptiles, and amphibians that are indigenous to the area.

A further review involving inquiries with various sources was performed in an attempt to make a more definitive determination on the potential occurrence of golden eagles at the NWIRP facility. Informal inquiries were made with the TPWD, USFWS, and Fort Hood Army Reservation. Both the TPWD and USFWS have no records of confirmed sightings of golden eagles in the McGregor area. The Fort Hood Army Reservation, which is located approximately 10 mi (16.1 km) west of NWIRP McGregor, has a record observation of a pair of golden eagles on the reservation that occurred four years ago. Although these eagles are not listed as Federal or state endangered or threatened species, they are protected under the Eagle Protection Act of June 8, 1940. Regulations in this act govern the taking, possession, and transportation of golden eagles for scientific, educational and depredations control purposes and for the religious purposes of Indian tribes. The scope of the regulations also include nests and eggs of golden eagles.

A potential nest tree for the raptor was located in Area S in the immediate vicinity of the sighting. The tree, a tall gum bumelia is approximately 10-foot (3 m) tall and is on top of a small mounded area. The nest is "v-shaped" with each arm of the "v" measuring approximately three feet in length. The depth of the nest is estimated at approximately one foot (0.3 m). Active use of this nest was not confirmed during the field reconnaissance.

Aquatic

As described in Section 3.1.5., surface water resources at the facility include intermittent streams, stock ponds, and evaporation and settling ponds. Habitat for fish species is limited primarily to the intermittent streams and stock ponds, to a small degree. Use of the evaporation and settling ponds by fish species is insubstantial due to the ponds' drier conditions and water quality. The locations of the surface water resources at the NWIRP facility are presented in Figure 3-12.

The intermittent streams provide for better utilization by fish species than the stock tanks. The streams serve as tributaries to Station and Harris Creeks, and the South Bosque River. The average channel width for most of the streams is 10 to 20 feet (3 to 6 m) and the average water

TABLE 3-7 PARTIAL LIST OF INDIGENOUS BIRDS

<u>Scientific Name</u>	<u>Common Name</u>
<i>Parus atricristatus</i>	Black Crested Titmouse
<i>Coragyps atratus</i>	Black Vulture
<i>Colinus virginianus</i>	Bobwhite Quail
<i>Molothrus ater</i>	Brown-headed Cowbird
<i>Cardinalis cardinalis</i>	Northern Cardinal
<i>Bubulcus ibis</i>	Cattle Egret
<i>Chordeiles minor</i>	Common Nighthawk
<i>Accipiter cooperii</i>	Coopers Hawk
<i>Sialia sialis</i>	Eastern Bluebird
<i>Passer domesticus</i>	English Sparrow
<i>Ardea herodias</i>	Great Blue Heron
<i>Bubo virginianus</i>	Greathorned Owl
<i>Charadrius vociferus</i>	Killdeer
<i>Mimus polyglottos</i>	Mockingbird
<i>Zenaidura macroura</i>	Mourning Dove
<i>Progne subis</i>	Purple Martin
<i>Buteo jamaicensis</i>	Red-tailed Hawk
<i>Turdus migratorius</i>	American Robin
<i>Meleagis gallopavo</i>	Turkey
<i>Cathartes aura</i>	Turkey Vulture

Source: USFWS, 1989

TABLE 3-8 PARTIAL LIST OF INDIGENOUS MAMMALS

<u>Scientific Name</u>	<u>Common Name</u>
<i>Dasypus novemcinctus</i>	Armadillo
<i>Eptesicus fuscus</i>	Big Brown Bat
<i>Rattus rattus</i>	Black Rat
<i>Lynx rufus</i>	Bobcat
<i>Canis latrans</i>	Coyote
<i>Peromyscus maniculatus</i>	Deer Mouse
<i>Sylvilagus floridanus</i>	Eastern Cottontail
<i>Sciurus niger</i>	Eastern Fox Squirrel
<i>Urocyon cinereoargenteus</i>	Gray Fox
<i>Sigmodon hispidus</i>	Hispid Cotton Rat
<i>Myocaster coypus</i>	Nutria
<i>Didelphis virginiana</i>	Opposum
<i>Procyon lotor</i>	Raccoon
<i>Mephitis mephitis</i>	Striped Skunk
<i>Odocoileus virginianus</i>	Whitetail Deer

Source: USFWS, 1989

TABLE 3-9 PARTIAL LIST OF INDIGENOUS REPTILES

<u>Scientific Name</u>	<u>Common Name</u>
<i>Elaphe obsoleta</i>	Black Rat Snake
<i>Thamnophis sirtalis</i>	Common Garter Snake
<i>Elaphe guttata</i>	Corn Snake
<i>Terrapene carolina</i>	Eastern Box Turtle
<i>Scalopus undulatus</i>	Eastern Fence Lizard
<i>Tantilla coronata</i>	Flathead Snake
<i>Rhinocheilus lecontei</i>	Longnose Snake
<i>Lampropeltis triangulum</i>	Milk Snake
<i>Nerodia erythrogastei</i>	Plain-bellied Water Snake
<i>Coluber constrictor</i>	Racer
<i>Ophisaurus attenuatus</i>	Slender Glass Lizard
<i>Trionyx muticus</i>	Smooth Softshell Turtle
<i>Chelydra serpentina</i>	Snapping Turtle
<i>Sceloporus olivaceus</i>	Texas Spiny Lizard
<i>Agkistrodon piscivorus</i>	Western Cottonmouth Snake
<i>Crotalus atrox</i>	Western Diamond-Back Rattlesnake
<i>Heterodon nasicus</i>	Western Hognose Snake
<i>Kinosternon flavescens</i>	Yellow Mud Turtle

Source: USFWS, 1989

TABLE 3-10 PARTIAL LIST OF INDIGENOUS AMPHIBIANS

<u>Scientific Name</u>	<u>Common Name</u>
<i>Rana catesbeiana</i>	Bullfrog
<i>Hylactophryse augusti</i>	Barking Frog
<i>Hyla chrysoscelis</i>	Caper Gray Treetoad
<i>Scaphiopus couchi</i>	Couchs Spadefoot
<i>Eumeces fasceatus</i>	Five-Lined Skink
<i>Anolis carolinensis</i>	Green Anole
<i>Bufo debilis</i>	Green Toad
<i>Acris crepitans</i>	Northern Cricket Frog
<i>Desmognathus auriculatus</i>	Southern Dusky Salamander
<i>Rana sphenoccephala</i>	Southern Leopard Frog
<i>Pseudacris clarkii</i>	Spotted Chorus Frog
<i>Ambystoma texanum</i>	Texas salamander
<i>Bufo speciosus</i>	Texas Toad

Source: USFWS, 1989

depth is estimated at 12 to 18 in (30 to 46 cm) under normal conditions. Most of the streams were dry at the time of the field reconnaissance. Some in-line stock ponds exist along some of the streams and water was observed in these ponds during the field reconnaissance. Also, the majority of the streams that were observed possess streamside vegetation consisting primarily of herbaceous cover and trees. These riparian areas provide a mixture of shaded zones along the stream courses.

The intermittent nature, as well as typical size and depth, of the streams limit the fish species that can use these areas under normal conditions. Common fish species expected to occur in these ephemeral streams during most of the year include minnows (*Pimephales* and *Notropis* spp.), shiners (*Notropis* spp.), mosquitofish (*Gambusia* spp.), and sunfish (*Lepomis* spp.). Table 3-11 is a partial list of fishes indigenous to the area. Some of the listed species may occur in the streams, especially the in-line stock ponds, when higher than average (i.e. storm events) stream flows occur.

Wildlife Management Areas

At the present time, there are 10 separate wildlife management areas at NWIRP McGregor (Figure 3-17). These areas are currently maintained by the Navy's caretaker staff in accordance with the 1989 Wildlife Management Plan. The size of these management areas range from 2.0 ac (0.8 ha) up to 100 ac (40 ha) and the total combined acreage is 270 ac (109 ha). Most of the areas are associated with the intermittent streams and adjoining riparian habitat.

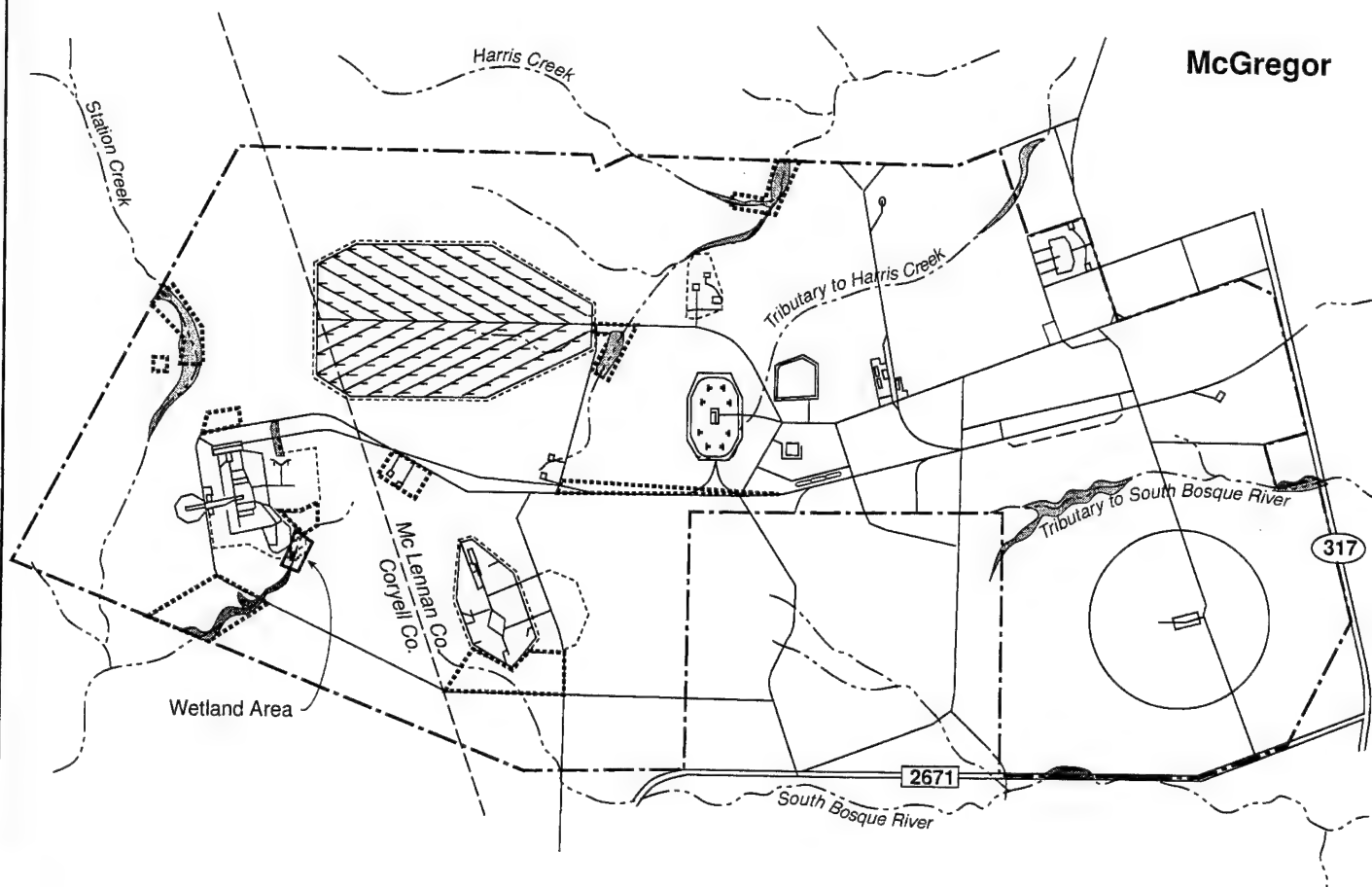
The initial management plan concept for the NWIRP McGregor Wildlife Management Areas was developed in 1976 by Southern Division, Naval Facilities Engineering Command in cooperation with the TPWD and the NRCS. The emphasis of this plan concentrated on habitat management for bobwhite quail, dove, and rabbit. The main focus of the adopted plan was the exclusion of the management areas from agricultural and grazing activities. Perimeter fences were constructed to prevent access to these areas by cattle and to allow for the natural revegetation of herbaceous cover (TPWD, 1978).

Subsequent to development of the original Wildlife Management Plan, the USFWS prepared an updated plan in 1988. The purpose of this plan was to provide guidance for developing and implementing a program to protect, conserve, and enhance wildlife resources at NWIRP McGregor. The plan was directed towards the preservation and management of stable biotic communities on undeveloped lands (USFWS, 1988). The updated plan focuses on deer, bobwhite quail, and non-game species, primarily birds. Elements of this plan carried forward the original management plan practice of excluding agricultural and grazing activities from the management areas. The updated plan was implemented by the Navy in 1989. The designated wildlife management areas have been excluded from use in the agricultural lease areas. In accordance with the lease requirements, entry is prohibited in the wildlife management areas by

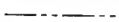



TABLE 3-11 PARTIAL LIST OF INDIGENOUS FISHES

<u>Scientific Name</u>	<u>Common Name</u>
<i>Notemigonus crysoleucas</i>	Golden Shiner
<i>Notropis emiliae</i>	Pugnose Minnow
<i>N. umbratilis</i>	Redfin Shiner
<i>N. lutrensis</i>	Red Shiner
<i>Pimephales promelas</i>	Fathead Minnow
<i>Campostoma anomalum</i>	Stoneroller
<i>Ictalurus melas</i>	Black Bullhead
<i>Fundulus notatus</i>	Blackstripe Topminnow
<i>Gambusia affinis</i>	Mosquitofish
<i>Lepomis cyanellus</i>	Green Sunfish
<i>L. macrochirus</i>	Bluegill
<i>L. humili</i>	Orangespotted Sunfish
<i>L. megalotis</i>	Longear Sunfish
<i>Percina caprodes</i>	Logperch
<i>P. sciera</i>	Dusky Darter

Source: USFWS, 1989



Legend

-  Wetland
-  Waters of the U.S.
-  Riparian Habitat
-  Wildlife Management Areas
-  Property Line
-  Facility Road

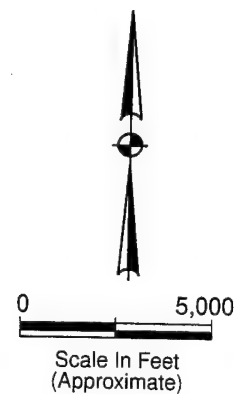


Figure 3-17. Natural Resources Sensitive Habitat Areas

the lessees except for retrieval of animals. Consequently, grazing within these areas is prohibited.

Absent statutory authority, Navy cannot impose restrictions on the future use of this surplus Federal property. Navy will, however, include appropriate notifications in the deeds of transfer for any parcels which require protection under appropriate Federal and state laws (100-year floodplains, wetlands, wildlife management areas, etc.) if the property is disposed of.

3.2.3. Threatened and Endangered Species

A review of Federal and state listed threatened and endangered species was performed for NWIRP McGregor. Preliminary coordination with the USFWS resulted in the identification of listed species that could occur within McLennan and Coryell Counties, but not necessarily at or in the immediate vicinity of the NWIRP McGregor facility. A subsequent telephone conversation with the Austin USFWS field office revealed that there are no known occurrences of threatened or endangered species at the facility. Furthermore, the USFWS 1988 Wildlife Management Plan for NWIRP McGregor indicated that no threatened or endangered species occurred at the facility during the time of the plant development.

The TPWD, through the Texas Biological and Conservation Data System, also indicated that there are no presently known occurrences of special species or natural communities in the immediate vicinity of the site. Table 3-12 is a compilation of Federal and state listed threatened and endangered species, as well as species of concern. Federal species of concern are those for which the USFWS has information indicating that proposing to list is possibly appropriate, but for which substantial data on biological vulnerability or threats are not currently available to support the immediate preparation of such rules. Species of concern have no legal protection under the Endangered Species Act and have been identified primarily for planning purposes.

The potential for occurrence of any of the listed species as year round residents at NWIRP McGregor is unlikely due primarily to the absence of preferred habitat, on-going agricultural activities, and facility maintenance activities (i.e. mowing). Of the listed species identified, preliminary information indicated that potential habitat for the Black-capped Vireo (*Vireo atricapillus*) and Golden-cheeked Warbler (*Dendroica chrysoparia*) may have been present at the facility. However, further review during the field reconnaissance revealed that primary elements of these species' preferred habitat do not occur at NWIRP McGregor. Specifically, the mixed-oak woodlands component for the Golden-cheeked Warbler's preferred habitat is non-existent. Regarding the Black-capped Vireo, oak-juniper woodlands that are used as nesting habitat do not exist at the facility. Responses from the USFWS and TPWD are included in Section 5.0, Agency Coordination.

**TABLE 3-12 FEDERAL AND STATE LISTED THREATENED AND
ENDANGERED SPECIES FOR CORYELL AND McLENNAN
COUNTIES**

<u>Scientific Name</u>	<u>Common Name</u>	<u>County</u>	<u>Federal</u>	<u>State</u>
<i>Vireo atricapillus</i>	Black-capped Vireo	Both	E	E
<i>Dendroica chrysoparia</i>	Golden-cheeked Warbler	Both	E	T
<i>Grus americana</i>	Whooping Crane	Both	E	E
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Both	T	E
<i>Sterna antillarum athalassos</i>	Interior Least Tern	Both	-	E
<i>Nerodia harteri paucimaculata</i>	Concho Water Snake	Coryell	-	E
<i>Plegadis chihi</i>	White-faced Ibis	Both	SOC	T
<i>Elanoides forficatus</i>	American Swallow-tailed Kite	Both	-	T
<i>Mycteria americana</i>	Wood Stork	Both	-	T
<i>Falco peregrinus tundrius</i>	Arctic Peregrine Falcon	Both	-	T
<i>Phrynosoma cornutum</i>	Texas Horned Lizard	Both	SOC	T
<i>Crotalus horridus</i>	Timber Rattlesnake	Both	-	T
<i>Lanius ludovicianus</i>	Loggerhead Shrike	Coryell	SOC	-
<i>Micropterus treculi</i>	Guadalupe Bass	Coryell	SOC	-
<i>Stygobromus bifurcatus</i>	Bifurcated Cave Amphipod	Coryell	SOC	-
<i>Taeniopteryx starki</i>	Leon River Winter Stonefly	Coryell	SOC	-
<i>Hexalectris nitida</i>	Glass Mountain Coral-Root	Coryell	SOC	-
<i>Croton alabamensis</i> var. <i>texensis</i>	Texabama (Fort Hood) Croton	Coryell	SOC	-
<i>Buteo regalis</i>	Ferruginous Hawk	McLennan	SOC	-
<i>Arremonops rativirgatus rativirgatus</i>	Texas Olive Sparrow	McLennan	SOC	-
<i>Thamnophis sirtalis annectans</i>	Texas Garter Snake	McLennan	SOC	-
<i>Notropis buccula</i>	Smalleye Shiner	McLennan	SOC	-
<i>Notropis oxyrhynchus</i>	Sharpnose Shiner	McLennan	SOC	-

Status Codes

E = Endangered

T = Threatened

SOC = Species of Concern

Source: USFWS, 1996 and TPWD, 1996

3.2.4. Sensitive Habitats

Sensitive habitats at NWIRP McGregor include intermittent streams, riparian corridors, wetlands, and wildlife management areas. Figure 3-17 provides the locations of these sensitive areas. These types of areas provide habitat for a variety of fish and wildlife species. As discussed in Section 3.2.2., portions of these sensitive habitats are currently included within designated wildlife management areas at the facility.

The wetlands and streams are subject to regulation under Section 404 of the Clean Water Act. Also, stock ponds that have a connection to a stream may be regulated under Section 404. A permit would be required from the U.S. Army Corps of Engineers (USACE) for the discharge of dredged or fill material into these areas. The USACE also regulates any draining, ditching, and excavation in wetlands that would destroy or degrade these areas. Riparian habitat in north central Texas is very limited and is restricted primarily to linear corridors associated with stream, creeks, and rivers. This type of habitat provides uninterrupted zones for wildlife to fully utilize.

Wetlands and Other Waters of the United States

Executive Order 11990 (Protection of Wetlands) directs Federal agencies to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands on Federal property. A preliminary review for wetlands and other waters of the U.S. at NWIRP McGregor was performed to identify potential jurisdictional areas. This review included the performance of a field reconnaissance to verify information obtained from U.S. Geological Survey maps and National Wetland Inventory maps. Based on this review, and USACE criteria for determining the occurrence of jurisdictional areas, there are waters of the United States and wetlands present at the NWIRP McGregor site. The waters of the United States consist of the intermittent streams as described in Section 3.1.5. and illustrated in Figure 3-12. These streams include Station Creek and its tributaries, Harris Creek tributaries, and tributaries of the South Bosque River. Portions of these streams contain small fringe wetland vegetation areas within the channel limits. Some of the representative wetland vegetation observed includes witchgrass, spikerush, seedbox, alligator weed, barnyard grass, cattail, and bluestem grass. The jurisdictional limits of these streams extend between the ordinary high watermarks on each bank, except where fringe wetlands occur beyond the stream banks. In these instances, the limits of jurisdiction extend to the outside edge of the wetland.

Only one area that was observed on the property appears to be more representative of a typical wetland area (Figure 3-17). This wetland is characterized as a wet meadow and is associated with a very small stream/swale measuring approximately 2 to 3 feet (0.6 to 0.9 m) wide. The wetland is extremely limited in size and encompasses approximately 0.16 ac (0.06 ha).

Dominant vegetation within the wetland includes annual sumpweed (*Iva annua*), cattail, spikerush, and bermuda grass along the periphery.

The waters of the United States, including wetland areas, that exist at NWIRP McGregor are subject to USACE jurisdiction under Section 404 of the Clean Water Act. Section 404 regulates the discharge of dredged and fill material into waters of the United States and wetlands. Consequently, any work resulting in such a discharge must be authorized by a USACE permit (Nationwide Permit, Regional General Permit, or Individual Permit) prior to the performance of the work. The intent of Section 404 is to protect and maintain the physical, chemical, and biological integrity of the nation's waters (including wetlands).

Riparian Habitat

Riparian areas are highly productive habitats that provide storage for floodwater, remove sediments and pollutants from water, produce organic material for aquatic organisms, provide habitat for migratory birds and other wildlife species, remove pollutants from the air, serve as windbreaks, and provide for recreational use. In north central Texas, riparian areas can provide habitat for 130 species of birds, 27 species of mammals, 28 species of lizards and snakes, 13 species of turtles, and 16 species of amphibians (USFWS, 1989).

There are several riparian corridors associated with the streams at NWIRP McGregor. The locations and approximate extent of the riparian areas are illustrated in Figure 3-17. Portions of these riparian areas are included in some of the designated wildlife management areas. A description of the typical riparian vegetation observed during the filed reconnaissance is provided in Section 3.2.1.

Absent statutory authority, Navy cannot impose restrictions on the future use of this surplus Federal property. Navy will, however, include appropriate notifications in the deeds of transfer for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.) if the property is disposed of.

3.3 SOCIOECONOMIC RESOURCES

3.3.1 Community Setting and Region of Influence

McGregor is located in McLennan County and is approximately 21 mi (34 km) southwest of Waco, Texas. For the purposes of this EA, the region of influence (ROI) under consideration is the area encompassing the City of McGregor and the NWIRP McGregor.

3.3.2 Demographics and Environmental Justice

Demographics

The recorded population for the City of McGregor in 1990 was 4,683 persons (City of McGregor, 1995d). A breakdown of population growth from 1960 to 1990 is presented in Table 3-13. A population profile of persons living in the City of McGregor shows a racial composite of 74 percent white; 15.8 percent black; less than one percent American Indian, Eskimo, or Aleut; and 10 percent other. Approximately 17.6 percent of the population of the City of McGregor is of Hispanic origin (U.S Census Bureau, 1990a).

There are approximately 1,950 households in the City of McGregor. The median age for households is 38 years, and the average family size is 2.86 persons (City of McGregor, 1995b). The largest age group in the community is the 25-44 years-old range.

The racial composition of the population within the immediate area of NWIRP McGregor is similar to that of the city. Approximately 4,965 people lived within a two-mile radius of the NWIRP facility as of 1996 (National Decision Systems, 1996). The largest age group within the area immediately surrounding the facility was the 40 to 49 year-olds, with the median age being 37 years (National Decision Systems, 1996).

Environmental Justice

Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" mandates that Federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of the programs on minority and low income populations. A minority population is defined as a group of people and/or a community experiencing common conditions of exposure or impact that consists of persons classified by the U.S. Bureau of the Census as Negro/Black/African-American; Hispanic; Asian or Pacific Islander; American Indian, Eskimo, or Aleut; or other non-white persons. A population profile of persons living within a 2-mile radius of NWIRP McGregor shows a racial composite of 80.2 percent white; 9.4 percent black; 0.1 percent Asian or Pacific Islander; and 10.3 percent other non-white persons. Approximately 18.2 percent of the population within a 2-mile radius of NWIRP McGregor is of Hispanic origin (National Decision Systems, 1996).

A low-income population is defined as one with a median income for a family of four equal to or below the national poverty level of \$12,674. Approximately 13.6 percent of the households, or approximately 11.5 percent of the population, within a 2-mi (3.2 km) radius of NWIRP McGregor live below the national poverty level (National Decision Systems, 1996).

Disproportionate environmental impact occurs when the risk or rate for a minority population

TABLE 3-13 POPULATION FOR THE CITY OF MCGREGOR

<u>Year</u>	<u>Population</u>
1960	4,642
1970	4,365
1980	4,513
1990	4,683

Source: United States Census, 1990

or low-income population from exposure to an environmental hazard significantly exceeds the risk or rate of the general population and, where available, to another appropriate comparison group. NWIRP McGregor is not located near any predominantly minority or low-income communities. Land uses directly adjacent to the previous industrial and open areas of NWIRP McGregor are mostly agricultural in nature. Land uses adjacent to the previous administrative area of NWIRP McGregor are mostly residential and green space (Figure 3-18). Prior to the contractor's departure, the population within the City of McGregor and within a 2-mi (3.2 km) radius of the administrative area of NWIRP McGregor was 73.9 and 80.2 percent white, respectively, and there were few minority groups. Approximately 16.3 percent of the population within the City of McGregor and 11.5 percent of the population within a 2-mi (3.2 km) radius of NWIRP McGregor lived below the national poverty level.

Operations, maintenance activities, and agricultural leasing activities conducted at NWIRP McGregor prior to interim caretaker status did not differentially affect (no disproportionate impacts) minority or low-income populations in the area. During the interim caretaker status, most of NWIRP McGregor, excluding the areas leased for agriculture use, has been preserved in a condition to limit deterioration and ensure public safety. No military industrial related activities are being performed at NWIRP McGregor. Site contamination investigations and cleanup is continuing. Thus, minority or low-income populations are not expected to be differentially affected as a result of the interim caretaker activities.

Executive Order 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks", mandates that Federal agencies identify and assess environmental health and safety risks that may disproportionately affect children as a result of the implementation of Federal policies, programs, activities, and standards. Children can be disproportionately affected by environmental health and safety risks since their neurological, immunological, digestive, and other bodily systems are still developing; they eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; their size and weight may diminish their protection from standard safety features; and their behavior patterns may make them more susceptible to accidents (62 Federal Register 19883-19888).

McGregor High School is located near the northeast boundary of NWIRP McGregor (Figure 3-18). No other schools are located directly adjacent to NWIRP McGregor. The activities closest to the school consisted of agricultural activities to the south and the administrative areas to the west. The closest industrial areas to the school were over two mi (3 km) away. The school was also 2.8 mi (4.5 km) from Area R and 8 mi (13 km) from Area L, the areas mostly likely to have generated high intensity noise during past operations.

Operations, maintenance activities, and agricultural leasing activities conducted at NWIRP McGregor prior to interim caretaker status did not differentially affect (no disproportionate impacts) children in the area based upon the pre-closure site activities identified in this section and the results of past and on-going site contamination investigations. During the interim

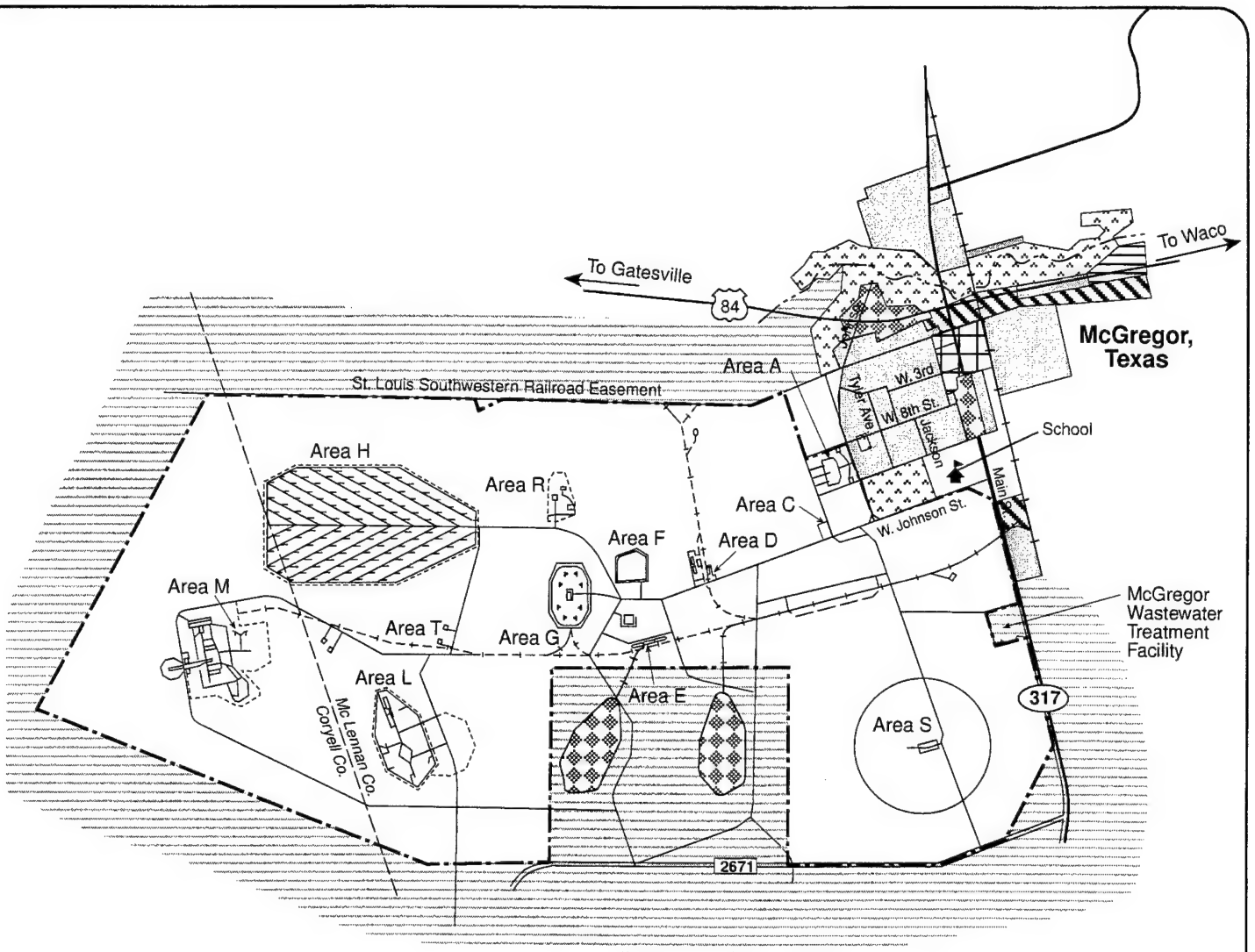


Figure 3-18. Adjacent Land Use to NWIRP McGregor
(U.S. Navy, 1992; Alliant, 1995a)

caretaker status, most of NWIRP McGregor, excluding the areas leased for agriculture use, has been preserved in a condition to limit deterioration and ensure public safety. No military industrial related activities are being performed at NWIRP McGregor. Site contamination investigations and cleanup is continuing. Thus, children are not expected to be differentially affected as a result of the interim caretaker activities.

3.3.3 Economic Activity

Economic activity in the immediate area around NWIRP McGregor consists primarily of commercial and agricultural use. Tax abatement is available as an incentive for economic and business development in McGregor. The municipal sales tax is 1.0 percent and the state sales tax is 6.25 percent. The total effective tax rate per \$100 current property value is \$2.34877 (TU Electric Community Profile, undated).

3.3.4 Employment

Based upon 1995 information, McLennan County had a civilian labor force of 94,520 with 6.0 percent unemployment (City of McGregor, 1995d). Ten major employment establishments were within the McGregor area, including NWIRP McGregor, in 1995 (Table 3-14). These establishments employed approximately 1,671 persons, which was 1.77 percent of the total county labor force.

The number of employees at NWIRP McGregor at the time of the announcement of closure (June 20, 1995) by the facility contractor was 458 persons. Of this total, 83.4 percent were male and 16.6 were female employees. For Equal Employment Opportunity (EEO) purposes, the NWIRP McGregor profile included a racial/ethnic distribution of the total number of employees as 82.6 percent White; 9.4 percent Black; 0.4 percent American Indian; 0.4 percent Asian; and, 7.2 percent of Hispanic origin. The median age of employees at the facility was 41 years old. The average level of education for the employees at this facility was a high school degree (60.3 percent), with 35.8 percent having an undergraduate degree, and 3.9 percent having graduate level degrees (NWIRP McGregor Human Resources, 1995). As indicated in Section 1.1.1, most of NWIRP McGregor, excluding the areas leased for agriculture use, has been placed in caretaker status until a decision is reached on disposal or retention of the property. As of February, 1, 1998, a caretaker maintenance staff consisting of one full-time person and two part-time persons remains on-site. The full-time person is the facility gate operator and also does weekly inspections on-site. One of the part-time staff operates the water utility and the other handles gate operations one day a week (U.S. Navy, 1998a & c). Current labor force numbers and unemployment is not available for the City of McGregor. However, the civilian labor force for McLennan County has increased from 94,520 in 1995 to 100,900 in 1998. Unemployment has fallen from 6.0 percent to 4.2 percent during the same period (City of McGregor, 1998).

TABLE 3-14 MAJOR EMPLOYERS IN THE MCGREGOR AREA (1993)

<u>Company</u>	<u>Products</u>	<u>Number of Employees</u>
NWIRP	Munitions	455
Smead Manufacturing	Office Supplies	370
Trane Corporation	Heating/Air Conditioning	257
McGregor ISD	Education	155
Westview Manor	Nursing Home	151
H&B Contractors	Utility Contractors	82
Centex Waste Management	Solid Waste Disposal	80
Triad Food Supermarket	Supermarket	41
City of McGregor	Municipal Government	40
L.L. Sams Furniture	Furniture Manufacturing	40

Source: City of McGregor, 1995c

3.3.5 Income

Based upon 1995 information, McLennan County had a median income of \$22,665 per household with the per capita income at \$14,925 (City of McGregor, 1995c). Prior to the contractor ceasing operations and vacating NWIRP McGregor, salaried employees averaged \$50,503 per year. Hourly employees at NWIRP McGregor were paid an average rate of \$13.52, which equated to \$28,117.41 per year. Most employees paid on an hourly basis included craft and trade jobs. Workers at the NWIRP McGregor were affiliated with a union (UPGWA/IUOE) and the wages at NWIRP McGregor tended to be higher than in the surrounding areas. The average hourly wage rate in the City of McGregor was \$10.50 per hour. Other examples of city wage rates were: Drill Press Operator, \$9.84/hour; Electronics Assembler, \$9.12/hour; Toolmaker, \$11.27; Production Welder, \$11.84; Machinist, \$11.99; Janitor, \$8.40; Truck Driver, \$11.26; Shipping Clerk, \$9.80; Secretarial, \$9.80; Computer Operator, \$13.13; Accounting Clerk, \$9.00 (TU Electric Community Profile, undated). Approximately 16.3 percent of the population of the City of McGregor was indicated to live below the national poverty level (U.S. Census Bureau, 1990a). Per capita income in McLennan County for 1998 is \$18,674 and the median income is \$433 per week (\$22,516) (City of McGregor, 1998).

3.3.6 Housing

Single-family housing accounts for approximately 82 percent of the housing available in McGregor (U.S. Census Bureau, 1990b). There are several subdivisions in the McGregor area that are currently expanding. Harris Creek County Estates subdivision has plans to construct 400 to 500 new homes (Paschal, 1996). Homes varying in size in the area are available for purchase or lease, and are available for occupancy. The average cost of a home in McGregor is \$36,663 (Paschal, 1996). Multi-family residential housing also is available in the McGregor area. The City of McGregor owns a 50-unit, all bills paid, apartment complex. The rental rates in the City apartment complex are \$305 for a one bedroom, \$360 for a two bedroom, and \$415 for a three bedroom apartment. Privately owned apartment complexes account for an additional 47 units. Average single-family rent in McGregor is approximately \$300. There are approximately 26 spaces in trailer parks in McGregor to provide additional housing. Approximately 35.6 percent of the total number of employees at NWIRP McGregor commuted to McGregor from Waco.

3.3.7 Municipal Services

Utilities

Texas Utility Electric Company (TU Electric) supplies electricity to the region which includes NWIRP McGregor, the City of McGregor, and the McLennan County Rural Electric Corporation. The system has a total generating capacity of 22,340,000 kilowatts (KW) with a

23.9 percent reserve at system peak. Transmission line voltage consists of 69 kilovolts (KV), 138 KV, and 345 KV (TU Electric Community Profile, undated).

Natural gas is provided to the McGregor community through 3-in (8 cm) and 6-in (15 cm) pipelines. The transmission line pressure is at 325 to 375 psi (2,241 to 2,586 kPa) and distribution pressure ranges from 5 to 45 psi (35 to 310 kPa).

Approximately 60 million gallons (227 million liters) of treated water is purchased from Lake Belton by McGregor for use in the City and for sale to the City of Woodway.

The City's wastewater treatment capacity is 1.1 mgd (4.2 million liters per day). The type of treatment is activated sludge and oxidation ditch.

Residential and commercial refuse collection is handled by Centex Waste Management. Final destination for municipal solid waste is Lacy-Lakeview Landfill near Moody, Texas. The remaining life of the landfill is 20 years (LLL, 1996).

Telephone service is part of the Southwestern Bell Telephone digital dialing system of Waco. Commercial and residential listings appear in the McGregor and Waco telephone directories.

Government

The City of McGregor has a council/manager form of government. There are six members of the city council including the mayor. There is a zoning body which has developed a master plan for the city. The city employs six full-time police officers and has a fire department composed of twenty volunteers.

Health Care

There is Scott & White Clinic, staffed with three doctors, and emergency medical services in the city. The volunteer emergency medical service has two fully equipped ambulances for transport to medical facilities. McGregor also has an emergency communications team to respond to emergency situations which includes ham radio links between fire, police, and medical vehicles. In addition, McGregor has two private dentists; a nursing home with 186 beds including an Alzheimer wing; and, one veterinarian clinic.

Recreational Facilities

The City of McGregor has one library and a telephone museum. There are fifteen churches representing ten different denominations. McGregor has public recreational facilities including four parks, a municipal swimming pool, two tennis courts, sand volleyball pit, football fields,

and basketball courts. The City also has one public golf course and a rodeo arena inside the city limits.

3.3.8 Education

The McGregor Independent School District (ISD) serves the area with one elementary school, one junior high school, and one high school. Total enrollment in 1995 was 1,192 students. The school district offers additional programs such as gifted and talented programs and vocational-technical education. The student-teacher ratio for all three grade levels is 15 students per teacher. In 1995, the district had an annual budget of \$4,500,000 (TU Electric Community Profile, undated). The McGregor ISD student enrollment for the 1997-1998 school year is 1,141. The student-teacher ratio is about 15:1. The district budget for the 1997-1998 school year is \$5,738,427 (McGregor ISD, 1998).

There is also one private school with an enrollment of 319 students in McGregor. Area universities and colleges include Baylor University in Waco, University of Mary Hardin-Baylor in Belton, McLennan Community College in Waco, Temple Junior College in Temple, and Texas State Technical College in Waco.

3.3.9 Transportation

Existing Area Roadways

The NWIRP McGregor site is served by two adjacent highways, FM 2671 and SH 317. These highways intersect at the southeast corner of the site. FM 2617 is a two-lane rural highway which traverses in an east-west direction for about 3.5 mi (5.6 km) along the south boundary of the facility. SH 317 is a two-lane rural highway which traverses in a north-south direction for about 2.75 mi (4.43 km) along the eastern boundary of NWIRP McGregor. SH 317 is an arterial highway on the west side of McLennan County and provides access from the site to the town of McGregor and to several other towns in the county. SH 317 also connects to IH 35 in Belton south of McGregor. SH 84 is located just north of the site in McGregor. This roadway is a four-lane highway which traverses in an east-west direction and provides access to the City of Waco and to IH 35.

Traffic volumes monitored by the Texas Department of Transportation (TXDOT) near the facility in 1994 on FM 2617 were 210 Average Annual Daily Traffic (AADT). SH 317 traffic volume in 1994 was 2,300 AADT. Existing Level of Service (LOS) based on these traffic volumes on each of the roads is LOS A. The LOS is a measure of traffic flow conditions ranging from "A" - Free Flowing to "F" - Unstable Flow (congested).

Railroad Service

The McGregor site has rail access to the two railroads serving the area. The Santa Fe Railway track traverses in a north-south direction and the St. Louis & Southwestern Railway in an east-west direction. These railroads intersect in McGregor. Railroad spurs from the NWIRP McGregor facility connect to both of the tracks. These rail connections provide the site with excellent access to rail shipping to any direction. Amtrak's Texas Eagle passenger trains traveling north and south stop daily at the City of McGregor's 1904 Rail Station.

Air Service

The McGregor Municipal Airport is located approximately 6 mi (10 km) east of NWIRP McGregor on SH 84. The airport has daily air freight service and can accommodate most business aircraft on its 75 feet (23 m) by 4,599 feet (1,402 m) runway. The airport has a Fixed Base Operator (FBO) which provides a new terminal, pilot lounge, planning, overnight accommodations, pilot training center, aircraft rental, sales, charter, fuel, catering, repairs, and courtesy transportation.

Bus Service

No bus service is available to McGregor. The nearest bus service is provided by Greyhound Bus Lines in Waco.

4.0 ENVIRONMENTAL CONSEQUENCES

This section describes the potential environmental consequences of the disposal and retention alternatives considered for NWIRP McGregor, identified in Section 2.1, along with the potential environmental consequences of the reasonably foreseeable reuse of the property, identified in Section 2.2. The No Action Alternative consists of retention of the property by the Navy in caretaker status. The Disposal Alternative (the proposed alternative) includes the consideration of whether to dispose of the property consistent with the National Defense Authorization Act for Fiscal Year 1996 or assign the property to GSA for disposal in accordance with the screening requirements of the Federal Property Management Regulations. The specific reuse of the facilities after ownership is transferred would be beyond the direct control of either the Navy or GSA. For the purposes of NEPA analysis, direct environmental consequences are those associated with the disposal or retention of the property, indirect impacts are associated with the actions taken by others for the reuse of the property should disposal be selected. The Navy has identified three levels of development intensity that represent a full range of possible reuse scenarios that could occur at the site should disposal be selected: high intensity, medium intensity, and low intensity.

This section is organized by resources in the same sequence as they were discussed in Section 3.0. The direct impacts of the Navy's actions are provided in Section 4.1, and the indirect impacts of the three reuse scenarios are provided in Section 4.2.

4.1 DIRECT EFFECTS AND THEIR SIGNIFICANCE

4.1.1 Physical Resources

4.1.1.1 Facilities

No Action Alternative

The No Action alternative would result in the U.S. government retaining ownership of NWIRP McGregor. No other military activities/missions would be performed on the property. The majority of the buildings located on the property would not be put to further use but would be preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety). A full-time caretaker/maintenance staff would be established to ensure facility resource protection, grounds maintenance, utilities operations, as necessary, and building care are accomplished. Maintenance on facility roads would be limited to ensure access only. Many of the water and sanitary lines would be disconnected or drained to preserve their condition. Agricultural leasing of the non-industrial areas of the property could be anticipated to continue as part of the caretaker operations (U.S. Navy, 1998a & c). On-going site contamination investigations and cleanup would continue until the site is fully remediated. This alternative represents a continuation of the interim conditions which have existed at McGregor since the

previous contractor (Hercules, Inc./Alliant Techsystems) ceased operations and vacated the facility on July 31, 1996.

Utility use on the property would remain at minimal levels. Water use would average less than 5,200 gpd (19,700 liters per day), or 1.9 million gallons (7.2 million liters) per year, based upon current caretaker staff activities and assuming continuation of existing agricultural water needs of the lessees. No water would be sold to outside users (U.S. Navy, 1998). The total pumpage (approximately 1.9 million gallons [7.2 million liters] per year) would be approximately 110.1 million gallons (416.8 million liters) per year less than during calendar year 1994. This would extend available groundwater supplies well passed the current anticipated projection of year 2020. Wastewater production would be less than 200 gpd (760 liters per day) for the caretaker staff, thus it could be assumed that discharges to the City of McGregor's Sewer Plant would be discontinued and portable sewage facilities provided. Based upon discharges prior to ceased operations by the previous facility contractor this would be a reduction of approximately 75,000 gpd (284,000 liters per day) to the City's plant. This represented approximately 15 percent of the estimated daily average treatment requirement for the plant. Electricity use, natural gas use, and solid waste production would be negligible relative to the service area. It is anticipated that these reductions would have a long-term positive impact on area utility supplies, especially for area water supplies.

Long-term adverse impacts to the facility's infrastructure and utility systems could occur from caretaker status. Decreased building maintenance levels and lack of use of the utility systems could lead to their deterioration, making them unsuitable for possible later use. This is particularly true of the water system.

Disposal Alternative

As indicated in Section 1.4, two options are available to the Navy for disposal of the property. The National Defense Authorization Act for Fiscal Year 1996 authorizes the conveyance of all right, title, and interest (including any improvement thereon) of the NWIRP McGregor facility to the City of McGregor, Texas. The conveyance is subject to the condition that the City, directly or through an agreement with a public or private entity, use the conveyed property (or offer the conveyed property for use) for economic redevelopment to replace all or a part of the economic activity being lost as a result of the action. Under this act, the Secretary of the Navy is authorized to convey the property without consideration of the standard disposal procedures implemented in the existing FPMR. This process would result in the direct transfer of approximately 9,770 ac (3,954 ha) of Federal property, including approximately 240 buildings, to the City of McGregor for economic redevelopment. Should it be decided not to convey either the total property or any part of the property to the City of McGregor, that property would be assigned (transferred) to GSA for disposal consistent with the standard disposal procedures implemented in FPMR. For this alternative, the action of Navy disposal is simply the transfer of title to another entity. The action would not result in any direct impacts to

facilities or would it be environmentally disruptive since no change to on-site facilities would occur as part of the action of title transfer. However, indirect impacts would be associated with the anticipated actions to be taken by others for the reuse of the property should disposal be selected. Indirect impacts are discussed in Section 4.2.

4.1.1.2 Earth Resources

No Action Alternative

For the industrial areas of the facility, no new impacts to geology, soils, or topography would be expected from the limited maintenance of the NWIRP McGregor facilities under the No Action alternative. Grounds maintenance would primarily consist of infrequent cutting to eliminate fire, health, and safety hazards. Impacts to geology, soils, or topography on the non-industrial areas leased for agricultural use would be consistent with past activities. Agricultural lessees' would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 and all additional conservation and erosion control requirements contained in the agricultural leases. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Thus, soil erosion potential would not change by placing the facility into caretaker status. Soil in all areas would benefit over the long-term from the reduction or elimination of possible contaminant spills and from the on-going remedial actions that removes contaminants from soils and shallow groundwater.

Disposal Alternative

Disposal, as a transfer of title, in and of itself is not an environmentally disruptive action and would not directly impact earth resources because no major change to on-site earth resources would occur as part of disposal.

4.1.3 Air Resources

NWIRP McGregor is located in an area which is in attainment for all priority air pollutants. The action of either disposal or retention of NWIRP McGregor is not subject to a conformity determination since the area is designated as in attainment for all criteria pollutants. For this reason, Emission Reduction Credits (ERCs) also are not applicable, since ERCs can only be assessed and applied to emissions that occur in nonattainment areas.

No Action Alternative

Impacts to air quality from caretaker activities of the property would be non-detectable. All air emission sources existing prior to the cease of industrial operations at the facility, except those associated with caretaker maintenance and continued agricultural use, would be eliminated. As

a result, a beneficial impact on ambient air quality, although classified as in attainment for all criteria, would be realized. All priority pollutants are expected to stay in attainment with Federal and state standards. The effect of implementation of new PM and ozone standards on the area can not be determined until comprehensive monitoring has been performed. For PM, the EPA will issue "unclassifiable" designations for PM_{2.5} for all areas in 1999. The EPA and State Governors will not be able to make the first determinations about which areas should be redesignated from unclassifiable to nonattainment status until 2002, or later. Upon being designated as a nonattainment area, States will have three years to develop pollution control plans and submit them to the EPA demonstrating how they will meet the standard. For ozone, the EPA will work with State Governors to designate areas as nonattainment for ozone by the year 2000 and areas will have until the year 2003 to develop and submit State Implementation Plans (SIPs) to provide for attainment of the new standard.

Disposal Alternative

Disposal of NWIRP McGregor would not result in a direct impact to air quality because disposal is simply a transfer of title and is not in and of itself an environmentally disruptive action..

4.1.1.4 Noise

No Action Alternative

Impacts to noise receptors related to caretaker activities under the No Action alternative would be minimal. All noise emission sources existing prior to ceased industrial operations, except those associated with caretaker maintenance and continued agricultural use, would be eliminated. Grounds maintenance would primarily consist of infrequent cutting to eliminate fire, health, and safety hazards. During caretaker status, certain activities which use power tools, machinery, or any other devices which have the potential to emit excessive noise would be restricted to normal working hours, in compliance with the local noise ordinance (Chapter 11, Article 2 of the McGregor City Code). Noise levels in proximity to these general activities can range from approximately 50 dB to 80 dB, depending on separation distance, consistent with past maintenance and agricultural activities at NWIRP McGregor. Overall noise sources would be intermittent and of generally lower intensity than the industrial noise which occurred during pre-closure operations. During previous rocket motor testing high intensity noise of short duration generally ranged between 145 dB to 180 dB in the area of testing. Although no noise complaints had been received by the City of McGregor regarding noise generated by NWIRP McGregor activities prior to ceased operations, a beneficial impact on noise levels of the general area would result from the implementation of the No Action alternative.

Disposal Alternative

Disposal is simply a transfer of title and is in and of itself not an environmentally disruptive action. It would not result in any demolition, construction, or new uses of the property. Therefore, it would cause no direct noise impacts.

4.1.1.5 Water Resources

4.1.1.5.1 Surface Water and Floodplains

No Action Alternative

Impacts to surface water resources related to caretaker activities under the No Action alternative would be minimal. All surface water release sources (spills, for example) or stormwater runoff impurities, except those associated with caretaker maintenance and continued agricultural lease activities, would be eliminated. This would result in improved stormwater runoff quality entering surface water features. Application of pesticides by the caretaker staff used in preventive and regular facility maintenance and grounds maintenance would be in accordance with FIFRA and state regulations. Agricultural lessees' would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 and all additional conservation and erosion control requirements contained in the agricultural leases. Agricultural lessees' would continue to be required to comply with existing contractual provisions concerning applications of pesticides and herbicides. All applications would be accomplished in compliance with DOD requirements for safety, effectiveness and environmental protection. Agricultural lessees' would also continue to maintain all grassed waterways, terraces, ditches and other structural conservation practices to the original construction specification as provided by the SCS. The 100-year floodplains located within the facility would continue to not be affected.

Disposal Alternative

Disposal is simply a transfer of title and is in and of itself not an environmentally disruptive action. No direct surface water or floodplain impacts would result from this transfer of title. The Navy would, however, include appropriate notifications in the deeds for any parcels that lie within 100-year floodplains consistent with Executive Order 11988.

4.1.1.5.2 Groundwater

As indicated in Section 3.1.5, a serious water supply problem is associated with the withdrawal of groundwater from the Trinity Group aquifer, including the upper Hensel aquifer which supplies NWIRP McGregor with water for industrial and potable use. There is a decline of

artesian pressure (reflected by water level declines) throughout a large area in north-central Texas (TWDB, 1990).

Groundwater availability in north-central Texas was studied and the estimated annual effective recharge to the Trinity Group aquifer(s) is estimated at a little over 26,000 acre-feet (32 billion liters) per year (TWDB, 1990). Depletable artesian storage was limited to water levels where 100 feet or more of artesian head is present above the top of the aquifer (TWDB, 1979). Using this depletable artesian storage rule-of-thumb and water level measurements collected during the 1988 well installation program at NWIRP McGregor, the volume of recoverable water is limited to approximately 220 feet (67 m) of artesian head. Assuming groundwater pumping volumes would remain relatively constant (approximately 344 ac-ft [424 million liters] per year) and that a hydrograph from a well screened across the Hensel aquifer located within 5 miles (8 km) of NWIRP McGregor (ST-40-45-402) adequately reflects static groundwater conditions, groundwater would be recoverable at NWIRP McGregor for approximately 25 years, until the year 2020.

No Action Alternative

Adverse impacts to groundwater resources related to caretaker activities of under the No Action alternative would be minimal. All release or emission sources, except those associated with caretaker maintenance and agricultural lease activities, would be eliminated. Application of pesticides by the caretaker staff used in preventive and regular facility maintenance and grounds maintenance would be in accordance with FIFRA and state regulations. Agricultural lessees' would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 and all additional conservation and erosion control requirements contained in the agricultural leases. Agricultural lessees' would also continue to be required to comply with existing contractual provisions concerning applications of pesticides and herbicides. All applications would be accomplished in compliance with DOD requirements for safety, effectiveness and environmental protection.

Groundwater use would average less than 5,200 gpd (19,700 liters per day) , or 1.9 million gallons (7.2 million liters) per year, based upon current caretaker staff activities and assuming continuation of existing agricultural water needs of the lessees. The total pumpage (approximately 1.9 million gallons [7.2 million liters] per year) would be approximately 110.1 million gallons (416.8 million liters) per year less than during calendar year 1994. This would extend available groundwater supplies well passed the current anticipated projection of year 2020, resulting in a positive impact on groundwater supplies for the area.

Disposal Alternative

Disposal is simply a transfer of title and is in and of itself not an environmentally disruptive action. No direct groundwater impacts would result from this transfer of title.

4.1.1.6 Hazardous Materials/Waste

No Action Alternative

Under the No Action alternative, the property would not be put to further use but would be preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety). Long-term positive impacts would occur since all hazardous materials and hazardous substance use related to past (pre-closure) operations would be eliminated. Under caretaker status, hazardous materials would be used in preventive and regular facility maintenance activities and grounds maintenance. The materials used for these activities would include pesticides, fuels, paints, and corrosives. The caretaker staff be responsible for hazardous materials handling training, as well as hazardous materials communication requirements of OSHA regulations. There would not be an appreciable increase in the use of pesticides under the No Action alternative. The application of pesticides by the caretaker staff would continue to be conducted in accordance with FIFRA and state regulations to assure the proper and safe handling and application of these chemicals.

Agricultural lessees' would continue to be required to comply with existing contractual provisions concerning applications of pesticides and herbicides. All applications would be accomplished in compliance with DOD requirements for safety, effectiveness and environmental protection. All applications would continue to have advance written approval by the Navy. Any state or county permits required for the application of a particular pesticide or herbicide would be obtained by the Lessee prior to application. Specific and complete information on pesticide and herbicide applications would continue to be furnished to the Navy by the Lessee. Lessees' would continue to be responsible for damage to other areas as a result of pesticide and herbicide applications.

With the exception of facilities used by caretaker personnel, all satellite accumulation areas and 90-day storage areas would be closed. The caretaker staff would arrange for off-site recycling or disposal of all hazardous waste. The small amount of hazardous waste that would be generated with the No Action alternative may enable the Navy to become an exempt, small-quantity generator. The Navy would continue to comply with all applicable Federal, state, and local laws and regulations.

Vacated buildings would be secured to prevent contact with asbestos-containing materials if the No Action alternative is implemented. Asbestos-containing materials would continue to be managed in a manner ensuring a safe site condition. Eventual remediation of hazardous materials such as asbestos, lead-based paint, PCB-containing materials, and radon would be performed. This alternative would not affect the handling of existing sites identified for cleanup. These sites are currently being fully evaluated and remedial actions would be taken, as necessary.

Disposal Alternative

Disposal, as a transfer of title, in and of itself is not an environmentally disruptive action and would not directly impact hazardous materials/waste because no major change to hazardous materials handling or hazardous waste generation would occur as part of disposal.

The transfer of surplus DOD property with hazardous materials/hazardous waste issues is an involved process. One of the first steps for property transfer is a review of currently available information and the preparation of an Environmental Baseline Survey (EBS). A second step is the preparation of a Finding of Suitability to Transfer (FOST). The purpose of the FOST is to report the environmental suitability of a parcel for transfer to nonfederal agencies or to the public by disclosing that one of the following is true:

1. No hazardous substances were stored for one year or more, or known to have been released or disposed of on the parcel; or
2. The requirements of CERCLA 120(h)(3) have been met for the parcel being transferred, which specifies that where item (1) above does not apply, deeds to transfer must disclose/contain:
 - a. information on the type and quantity of the release of hazardous substances, and a description of the remedial action taken;
 - b. a covenant warranting that remedial action has been taken and any additional remedial action found to be necessary after the date of such transfer shall be conducted by the Federal government; and
 - c. a clause granting the Federal government access to the property for remedial action.

As indicated in Section 3.1.6, various initial site investigations, including completion of the Phase I RFI and Phase I EBS, have been conducted at NWIRP McGregor and implementation of additional investigations (a Phase II RFI and Phase II EBS) is in process to fully assess the various environmental concerns. Site investigations and remedial action would continue at NWIRP McGregor until the property is remediated and corrective action is complete (U.S. Navy, 1996c). The formal RCRA closure procedure for the RCRA permitted units at NWIRP McGregor, including the development and implementation of a RCRA Closure Plan, is required for each permitted storage, treatment or disposal unit. Although closure and remediation of the RCRA-regulated units would be conducted under RCRA, the CERCLA process, through the Navy's IRP, would proceed concurrently to address non-RCRA sites (identified by the EBS process). In the state of Texas, property identified and receiving closure

concurrence of the TNRCC is transferable under the 120(h)(4) process. Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process. The timing of the remediation effort is dependent on the extent of the remediation efforts required and available funding. The Navy would coordinate with the future owner and/or operator of the installation and would perform all required remediation prior to facility transfer and reuse.

Minor amounts of renovation or demolition activities are expected under the reuse scenarios discussed in Section 2.2. Pursuant to the National Emission Standards for Hazardous Air Pollutants (NESHAPs) program, the EPA has promulgated regulations specifically addressing asbestos emissions from manufacturing operations, building demolition/renovation operations, and waste disposal (40 CFR Part 61, Subpart M). Therefore, any asbestos-containing materials in structures would not present an environmental or health threat during future reuse. Asbestos-containing materials that become friable after property transfer would be properly removed and disposed of by the new owners according to state and Federal regulations to prevent an adverse impact to the environment or human health. In addition, prior to renovation/demolition activities, paint testing would occur to determine possible lead content. The results would then be used to develop approved disposal plans, as appropriate.

As indicated in Section 3.1.6, the use of underground storage tanks (USTs) at NWIRP McGregor was minimal (U.S. Navy, 1996c). Underground storage tanks in Area E have been removed or abandoned in place. The area has been remediated and has been approved for closure by the TNRCC (U.S. Navy, 1996c). Two USTs were located in Area D. The first was removed in 1993 and the status of the second is not available. One UST is indicated to be located in Area F (Building 617) and five in Area L (Building 1106). The status of these USTs is also unknown. The USTs with unknown status will be considered for possible transfer if additional site investigations reveal no spills or contamination to the area or the USTs will be removed if spills or contamination are identified. The Navy will remediate any contaminated soil and groundwater associated with any USTs requiring removal. Underground storage tanks required for any alternative reuse, if needed, will need to be constructed and maintained according to the appropriate EPA and TNRCC regulations. This may include above- or below-ground storage tanks.

Additionally, because sampling conducted during late Spring/early Summer 1998 indicated the possible presence of perchlorate at NWIRP McGregor, the Navy is working very closely with the IPSC, EPA, and TNRCC to identify, characterize and assess impacts that may be associated with the possible presence of perchlorate at NWIRP McGregor. The results of this assessment would be coordinated with the future owner and/or operator of the installation, as appropriate.

4.1.1.7 Historical and Archeological Resources

As indicated in Section 3.1.7, Buildings 105, 106, 300, 601, 602, 603, 711, 712, 1201, 1237, 2301, 2308, and 2309, along with parts of the High Explosive Magazine Area (Buildings 8001 through 8064) at NWIRP McGregor have been identified as eligible for the NRHP. Additionally, an archeological reconnaissance survey identified one prehistoric component (41ML254) and 13 historic components (41CV1604, 41CV1606, 41CV1609, 41CV1610, 41ML239, 41ML240, 41ML241, 41ML243, 41ML245, 41ML247, 41ML248, 41ML252, and 41ML254) as being potentially eligible for listing on the NRHP.

No Action Alternative

Under the No Action alternative, the majority of the buildings located on the property would not be put to further use but would be preserved (i.e., placed in a condition intended to limit deterioration and ensure public safety). This represents a continuation of the interim conditions which have existed at NWIRP McGregor since the previous contractor (Hercules, Inc./Alliant Techsystems) ceased operations and vacated the facility. All buildings considered eligible for NRHP, except Building 300, have been preserved as part of the interim caretaker status. Building 300 is currently being used by the gate operator and as office space for the Navy's contamination investigators. This use may continue under long-term caretaker status, however, would not adversely impact the building's eligibility since these activities are consistent with previous uses. Thus, implementation of the No Action alternative would result in minimal potential impacts to historic buildings onsite.

Past activities in the area of the eligible archeological resources have been mostly agricultural. These activities have continued during the interim caretaker status consistent with pre-closure activities. The agricultural lessees' continue to comply with all provisions of the lease agreements including the conservation provisions of the Food Security Act of 1985 and all additional conservation and erosion control requirements contained in the agricultural leases. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Under the No Action alternative, this activity could be anticipated to be continued with no new activities being implemented in the areas not previously disturbed by pre-closure agricultural activities. Since this a continuation of previous activities onsite, minimal new impacts to archeological resources would occur.

Disposal Alternative

Because the proposed action (disposal) being considered could result in the transfer of the eligible historic properties to other entities, the State Historic Preservation Office (SHPO) recommended that a MOA be prepared including appropriate deed covenants providing for SHPO review of character altering exterior alternations to those eligible buildings which could

potentially be transferred. The SHPO also recommended that prior to any demolition or transfer, the Navy complete and submit HABS Level III survey documentation for each property type. This documentation will create a permanent record of the buildings and structures that played important roles in the successful operation of NWIRP McGregor. This documentation also mitigates for the possible impacts from potential alternations to or demolition of eligible properties. The HABS Level III documentation was completed in September 1997 and has been accepted by the SHPO as completion of the Section 106 process (see correspondence in Section 5.0 - THC letters of September 16 and November 6, 1997).

Additionally, the SHPO has also reviewed the archeological survey report and recommended that, if the property is to be transferred, the Navy and the acquiring entity agree to transfer NWIRP McGregor with a protective covenant that includes adequate conditions to ensure the preservation of the property's significant archeological features (see correspondence in Section 5.0 - THC letter of June 24, 1996). The Navy will incorporate protective covenants for both historic and archeological resources into the MOA which will be completed prior to any permanent transfer of the property at NWIRP McGregor (U.S. Navy, 1998d).

4.1.2 Biological Resources

4.1.2.1 Vegetation

No Action Alternative

The No Action alternative would result in little to no new impact to vegetation resources in the industrial areas of NWIRP McGregor. Some caretaker maintenance activities would continue around certain structures and facilities to control vegetation for fire prevention, health, and safety reasons. These activities would include occasional mowing and cutting of vegetation. Application of herbicides would also occur in limited areas to impede nuisance growth. These caretaker maintenance activities are expected to result in little to no permanent impact to vegetation resources.

Impacts to vegetation in the non-industrial areas leased for agricultural use would be consistent with past activities. Agricultural lessees' would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 and all additional conservation and erosion control requirements contained in the agricultural leases. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Agricultural lessees' would continue to be required to comply with existing contractual provisions concerning applications of pesticides and herbicides. All applications would be accomplished in compliance with DOD requirements for safety, effectiveness and environmental protection. Agricultural lessees' would also continue to maintain all grassed waterways, terraces, ditches and other structural conservation practices to

the original construction specification as provided by the SCS. These caretaker agricultural activities are expected to result in little to no permanent impact to vegetation resources.

Disposal Alternative

Disposal is simply a transfer of title and is in and of itself not an environmentally disruptive action. No direct impacts to vegetation would result from this transfer of title.

4.1.2.2 Wildlife

No Action Alternative

The No Action alternative would result in a possible increase in site utilization by various wildlife species since only caretaker maintenance activities and continued agricultural use would occur. Lack of human activity and operations would encourage wildlife utilization in areas not previously used and/or in areas that were used to a minimal extent by wildlife.

Disposal Alternative

Disposal is simply a transfer of title and is in and of itself not an environmentally disruptive action. No direct impacts to wildlife would result from this transfer of title.

4.1.2.3 Threatened and Endangered Species

No Action Alternative

The potential for occurrence of any of the listed species as year round residents at NWIRP McGregor is unlikely due primarily to the absence of preferred habitat, continuation of on-going agricultural activities, and caretaker maintenance activities (i.e., mowing). There would be no impact to threatened or endangered flora and fauna as a result of the implementation of the No Action alternative.

Disposal Alternative

Disposal is simply a transfer of title and is in and of itself not an environmentally disruptive action. No direct impacts to threatened and endangered species would result from this transfer of title.

4.1.2.4 Sensitive Habitats

No Action Alternative

The placement of NWIRP McGregor into caretaker status under the No Action alternative would not result in any impact to sensitive habitat. It is anticipated that habitat diversity would increase due to the over-all limited maintenance activities on the property. This would result in positive impact overall to the habitat interrelationships through the occurrence of natural succession which would yield an increase in riparian habitat and other habitat areas.

Disposal Alternative

Disposal is simply a transfer of title and is in and of itself not an environmentally disruptive action. No direct impacts to sensitive habitats would result from this transfer of title. Absent statutory authority, Navy cannot impose restrictions on the future use of this surplus Federal property. Navy would, however, include appropriate notifications in the deeds of transfer for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.) if the property is disposed of.

4.1.3 Socioeconomic Resources

4.1.3.1 Community Setting and Region of Influence

No Action Alternative

The implementation of the No Action alternative would not impact the basic infrastructure of the City of McGregor or surrounding areas. The community setting would remain the same as well. Any increases or decreases in the population are not anticipated to influence census tracts or election districts. The transportation network and utility infrastructure in McGregor are not expected to be negatively impacted by the action. The geographic ROI is not anticipated to change as a result of implementation of the No Action alternative.

Disposal Alternative

No direct impacts to community setting and ROI would result from this action, since disposal is simply a transfer of title.

4.1.3.2 Demographics and Environmental Justice

4.1.3.2.1 Demographics

No Action Alternative

Under the No Action alternative, there would be some potential for the population of the City of McGregor to decrease because of less demand for industrial labor. However, those decreases would not influence overall demographics of McLennan County. The demographic profile of the City of McGregor would most likely reflect one of a rural or farming community rather than one influenced by industrial activity.

Disposal Alternative

No direct impacts to the demographic profile would result from this action, since disposal is simply a transfer of title.

4.1.3.2.2 Environmental Justice

Executive Order 12898 (issued on February 11, 1994), entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" mandates that Federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of the programs on minority and low income populations. On April 21, 1995, the Secretary of Defense submitted a formal Environmental Justice strategy and implementation plan to the EPA.

Pursuant to the Executive Order and DOD strategy, the following activities have been carried out in the process of the EA preparation:

- U.S. Census demographic information (1990) has been reviewed for the identification of economic and racial groups in the area that might be adversely affected (Section 3.3.2); and
- Identified low-income and minority groups have been notified about public meetings (both public scoping and RAB meetings) and document review processes.

For the purposes of this EA, disproportionate adverse impact to minority or low-income populations occurs when the population within a given Census Block Group is adversely impacted and the percentage of the population which is minority and/or low-income within the Block Group is more than double the percentage of the population which is minority and/or low-income within an appropriate comparison group. The appropriate comparison group may

vary depending upon the resource; however, in evaluating impacts for most resources, the comparison group would be the City of McGregor. The exceptions to this would be for potential disproportionate adverse impacts related to noise levels, air quality, land use, transportation/traffic, and fire and police protection services where the Block Groups within a 2-mile radius surrounding the facility would be the comparison group.

NWIRP McGregor is not located near any predominantly minority or low-income communities. Land uses directly adjacent to NWIRP McGregor are agricultural in nature. The population within the City of McGregor and within a 2-mile (3 km) radius of NWIRP McGregor is 73.9 percent and 80 percent white, respectively, and there are few minority groups. Approximately 16.3 percent of the population within the City of McGregor and 11.5 percent of the population within a 2-mile (3 km) radius of NWIRP McGregor live below the national poverty level.

Operations, maintenance activities, and agricultural leasing activities conducted at NWIRP McGregor prior to interim caretaker status did not differentially affect (no disproportionate impacts) minority or low-income populations in the area. During the interim caretaker status, most of NWIRP McGregor, excluding the areas leased for agriculture use, has been preserved in a condition to limit deterioration and ensure public safety. No military industrial related activities are being performed at NWIRP McGregor. Site contamination investigations and cleanup is continuing. Thus, minority or low-income populations are not expected to be differentially affected as a result of the interim caretaker activities. Also, as indicated throughout the discussions contained within this environmental consequences section, no disproportionate impact to the persons residing in the area of NWIRP McGregor is anticipated to occur as a result of implementation of any of the proposed action alternatives, either No Action or Disposal.

Additionally, Executive Order 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks", mandates that Federal agencies identify and assess environmental health and safety risks that may disproportionately affect children as a result of the implementation of Federal policies, programs, activities, and standards. Children can be disproportionately affected by environmental health and safety risks since their neurological, immunological, digestive, and other bodily systems are still developing; they eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; their size and weight may diminish their protection from standard safety features; and their behavior patterns may make them more susceptible to accidents (62 Federal Register 19883-19888).

McGregor High School is located near the northeast boundary of NWIRP McGregor (Figure 3-18). No other schools are located directly adjacent to NWIRP McGregor. The activities closest to the school consisted of agricultural activities to the south and the administrative areas to the west. The closest industrial areas to the school were over two miles (3 km) away. The school

is located 2.8 miles (4.5 km) from Area R and eight miles (13 km) from Area L, the areas mostly likely to have generated high intensity noise during past operations.

Operations, maintenance activities, and agricultural leasing activities conducted at NWIRP McGregor prior to interim caretaker status did not differentially affect (no disproportionate impacts) children in the area based upon the pre-closure site activities identified in this section and the results of past and on-going site contamination investigations. During the interim caretaker status, most of NWIRP McGregor, excluding the areas leased for agriculture use, has been preserved in a condition to limit deterioration and ensure public safety. No military industrial related activities are being performed at NWIRP McGregor. Site contamination investigations and cleanup is continuing. Thus, children are not expected to be differentially affected as a result of either continued caretaker activities (the No Action alternative) or disposal, since disposal is simply a transfer of title.

Further, Navy has ensured that opportunities for community input in the NEPA process have been and would continue to be provided. Reasonable attempts to solicit public comments during the scoping period were made at a public scoping meeting held on March 26, 1996, at the McGregor High School Auditorium. The meeting was announced in local newspapers. Navy has attempted to address all issues of concern expressed at the scoping meeting in the development of this document. In addition, in order to comply with Executive Orders 12898 and 13045, a notice announcing the availability of this EA would be published in local newspapers to allow the total public (including minority and low-income individuals and populations) the opportunity to comment on the proposed action.

Additionally, a RAB has been formed which includes individuals from outside of the former Naval facility and the DOD who might have an interest in the restoration and clean-up of the site. The RAB holds quarterly meetings which are open to the public. These meetings are announced in local newspapers and on local radio networks. The purpose of the meetings is to review environmental data and restoration plans, monitor environmental restoration at the facility, and provide for a forum for the discussion and exchange of information regarding cleanup between the Navy, the regulatory agencies, and the community.

4.1.3.3 Economic Activity

No Action Alternative

Implementation of the No Action alternative may lower the City's tax base because fewer employment opportunities would equate to fewer households. City revenue from personal property taxes as well as school taxes may be negatively affected if fewer people live in the McGregor community. Total costs associated with maintaining NWIRP McGregor for as long as necessary in caretaker status under the No Action alternative would be minimal. Therefore, it is anticipated that implementation of the No Action alternative would result in a decrease in

regional economic activity, as compared to the amount present when NWIRP McGregor was operating.

Disposal Alternative

No direct impacts to the economic activity of the City of McGregor or region would result from this action, since disposal is simply a transfer of title.

4.1.3.4 Employment

No Action Alternative

An increase in unemployment in the City of McGregor may result under the No Action alternative if the labor force can not find jobs to replace those lost as a result of Hercules Inc./Alliant Techsystems leaving the community. The number of employees at NWIRP McGregor was 458 persons on June 20, 1995 when Alliant Techsystems announced their closure of operations (Alliant, 1996b). One full-time person and two part-time persons are currently being retained at the facility to serve as the interim caretaker staff. It is anticipated that the full-time caretaker staff would consist of two persons. Current labor force numbers and unemployment is not available for the City of McGregor. However, the civilian labor force for McLennan County has increased from 94,520 in 1995 to 100,900 in 1998. Unemployment has fallen from 6.0 percent to 4.2 percent during the same period (City of McGregor, 1998). Based upon these numbers, impacts to over-all employment of the area are anticipated to be minimal.

Disposal Alternative

No direct impacts to employment would result from this action, since disposal is simply a transfer of title.

4.1.3.5 Income

No Action Alternative

A decrease in income to the area may result under the No Action alternative if the labor force can not find similar paying jobs to those lost as a result of Hercules Inc./Alliant Techsystems leaving the community. Salaried employees at NWIRP McGregor averaged \$50,503 per year. Hourly employees of NWIRP McGregor were paid an average rate of \$13.52, which equated to \$28,117.41 per year. The workers at the NWIRP McGregor were affiliated with a union (UPGWA/IUOE) and the wages at NWIRP McGregor tended to be higher than in the surrounding areas. The City of McGregor wage rates were lower than average wages at NWIRP McGregor. Average hourly wage rate in McGregor was \$10.50 per hour. A staff of approximately 2 persons would be employed to maintain the facility under the No Action

alternative. Anticipated salaries of the caretaker staff is approximately \$13.50 to \$15.00 per hour (U.S. Navy, 1996). Per capita income in McLennan County for 1998 is \$18,674 and the median income is \$433 per week (\$22,516) (City of McGregor, 1998).

Disposal Alternative

No direct impacts to income would result from this action, since disposal is simply a transfer of title.

4.1.3.6 Housing

No Action Alternative

Implementation of the No Action alternative may potentially result in families moving elsewhere to seek employment because of the loss of jobs created by the relocation of Hercules Inc./Alliant Techsystems. An over supply of housing may occur if the labor force relocates elsewhere to find employment. No current housing numbers are available; however, based upon the current labor force and unemployment numbers for the county few employment related impacts have resulted since the closure of NWIRP McGregor. Impacts to housing should be similar.

Disposal Alternative

No direct impacts to housing would result from this action, since disposal is simply a transfer of title.

4.1.3.7 Education

No Action Alternative

The potential exists that families with school-aged children may relocate outside the community in search of better job opportunities as a result of implementation of the No Action alternative. As a result, some downsizing of the McGregor ISD could potentially be expected. The student enrollment for the 1997-1998 school year is 1,141, a 51 student reduction from 1995 conditions. Thus, impacts to over-all student enrollment are anticipated to be minimal.

Disposal Alternative

No direct impacts to education would result from this action, since disposal is simply a transfer of title.

4.1.3.8 Municipal Services

No Action Alternative

Utility use at NWIRP McGregor under the No Action alternative would decrease to minimal levels. Water use would average less than 5,200 gpd (19,700 liters per day) and wastewater production would be less than 200 gpd (760 liters per day) for the caretaker staff. Electricity use, natural gas use, and solid waste production would be negligible relative to the service area. It is anticipated that these reductions would have a long-term positive impact on area utility supplies, especially for area groundwater supplies which would extend passed the current anticipated projection of year 2020. However, a loss of revenue to the local utilities would be expected compared to conditions prior to ceased operations at the facility.

Disposal Alternative

No direct impacts to municipal services would result from this action, since disposal is simply a transfer of title.

4.1.3.9 Transportation

No Action Alternative

Impact to area transportation would be minimal under the No Action alternative. Roads at NWIRP McGregor would continue to be maintained in order to prevent deterioration. Peak hour traffic surrounding the facility would decrease compared to pre-closure conditions and the level of service (LOS A) of adjacent roadways would not be affected.

Disposal Alternative

Disposal, which is simply a transfer of title, would not directly affect traffic or circulation. Disposal of NWIRP McGregor would not create any vehicle or rail traffic, parking, transit, or bicycle and pedestrian impacts.

4.2 INDIRECT EFFECTS AND THEIR SIGNIFICANCE

As previously discussed, the specific reuse of the facilities after ownership is transferred would be beyond the direct control of the Navy. For the purposes of NEPA analysis, indirect impacts are associated with the actions taken by others for the reuse of the property should disposal be selected. The Navy has identified three levels of development intensity that represent a full range of possible reuse activities (high intensity, medium intensity, and low intensity) that may occur at the site should disposal be selected. These land use intensities refer to the ratio of persons, households, or volume of building or development to some unit of land area as

discussed in Section 2.2. Intensity parameters typically include floor area ratios, site coverage, and density of population associated with each type of use (employees, commercial, etc.). Impacts projected for the intensity-based reuse scenarios are based upon the typical examples and estimated employment identified in Section 2.2. Although other possible examples of intensity-based land use can occur, it is anticipated that the potential impacts identified in these discussions would be typical of the intensity gradient identified.

These reuse scenarios represent uses which are considered less than the operational levels which existed under the previous user (Hercules, Inc./Alliant Techsystems). However, the potential reuse of the property by one operator performing industrial and heavy manufacturing is no longer reasonably foreseeable for the future use of the property. Operation of NWIRP McGregor prior to closure was considered very high intensity use for the area due to the nature of the industrial operations (even though the individual complexes were separated by large areas of agricultural use). This usage would be expected to exert a greater impact to the physical and biological communities than any lesser intensive reuse scenario. Consequently, the projected physical and biological impacts anticipated due to the implementation of the City's preferred alternative (Reuse Scenario I - High Intensity), as well as Reuse Scenarios II and III, is not generally expected to be as great as impacts previously experienced during past NWIRP McGregor operations.

4.2.1 Physical Resources

4.2.1.1 Facilities

A maximum of 240 buildings, containing over 850,000 square feet (79,000 square m) of facilities (Table 3-1), can potentially be reused by the acquiring entity for each reuse scenario (intensity-based land use). This also includes approximately 60 miles (97 km) of roads (42 miles [68 km] improved) connecting the various activities onsite, rail lines, an onsite water plant and storage reservoirs, and other miscellaneous structures. In conjunction with the departure of Hercules, Inc./Alliant Techsystems from NWIRP McGregor, the Navy evaluated the condition of all structures, roads, and associated utilities. This evaluation consisted of an initial inspection to establish the pre-closure condition of all structures with emphasis on interior and exterior building integrity. As indicated in Section 2.2, only those buildings that have been identified in acceptable operating condition prior to securement or in a state of lay away that can be readily activated to operational conditions have been included as part of the indirect reuse impact assessment.

Based upon inspections by Navy personnel, this includes the majority of the buildings located at the site, except for the 32 explosive magazines in Area H which are no longer functional due to previous structural damage (Figure 1-9), those buildings in Area G which were previously abandoned (Figure 1-8), and the Melt/Pour Building (no currently assigned building number) located in Area L (Figure 1-10) (U.S. Navy, 1995c & 1996d). The structural damage at the 32

explosive magazines in Area H has been cleaned-up such that only slabs and walls exist (U.S. Navy, 1998a). Major new construction and renovation activities would be required to restore these facilities; however, major new construction efforts were not identified by the City of McGregor for implementation of the reuse scenarios developed. Thus, it is assumed that these facilities would not be utilized by the City of McGregor or other acquiring entity as part of any redevelopment.

Reuse Scenario I - High Intensity

It is anticipated that high intensity use by the acquiring entity can utilize most of the existing structures (approximately 809,800 square feet [75,200 square m]) which have been identified in acceptable operating condition at NWIRP McGregor. The typical example for this reuse scenario is a possible mixed use of the facilities including administrative, commercial, industrial (light to heavy), manufacturing, and agricultural uses (Section 2.2). Modifications can be anticipated to some of the buildings and infrastructure depending on the specific usage.

Based on the typical mixed use example identified, utility use would most likely be less than pre-closure conditions for most areas. Water use at the site is anticipated to average approximately 169,300 gpd (640,900 liters per day), or 61.8 million gallons (233.9 million liters) per year, based upon 1,267 employees and assuming existing water needs for air conditioning and continuation of any necessary agricultural water needs. Additionally, the potential for supplying existing secondary users can continue representing an additional 16.8 million gallons (63.6 million liters) per year. Total pumpage would be approximately 78.6 million gallons (297.5 million liters) per year (215,342 gpd [815,134 liters per day]), which would be approximately 33 million gallons (124.9 million liters) per year less than was used during calendar year 1994. This would provide water supply well passed the current anticipated projection of year 2020. However, it can be anticipated that the City of McGregor would utilize the available pumping capacity (33 million gallons [124.9 million liters] per year) to meet its current demands and reduce the amount of water being purchased from Lake Belton.

Wastewater production would continue at a maximum of 70,000 to 75,000 gpd (265,000 to 284,000 liters per day) to the City of McGregor's Sewer Plant. Existing Area M is anticipated to continue to be serviced by a sewer/septic system with discharge to an Imhoff tank. Septic tank systems/leach fields would also continue to service existing Areas E, L, T, and some of the buildings in Area G. Sewer lines leading from the remaining portions of Area G would have to be reconnected if they are to be used.

Electric usage would average 85,084 KWH/day and natural gas usage would average 519 MCF/day (15 million m³/day), consistent with pre-closure usage. Non-hazardous solid waste would average approximately two tons per day. Because most of the internal communication equipment and wiring has been removed from the majority of the buildings, new communication systems would be required as part of any of the reuse scenarios. It is

anticipated that metering of the various utilities would be required at each structure to allow for proper billings.

It is anticipated that the existing rail lines, east of existing Area E, would require rehabilitation and new trackage would be required to service areas to the west to existing Area M. As much as 20 miles (32 km) of new trackage can be anticipated to be required to restore the original rail-lines. The existing improved roadways would be capable of handling the volume of heavy loads typical of an industrial area. However, annual maintenance would average from \$750,000 to \$1,000,000 to maintain them to the standards previously used at the plant. Those maintenance standards were beyond TxDOT standards to allow for the heavy loads which were previously transported to and from the plant.

Reuse Scenario II - Medium Intensity

It is anticipated that medium intensity land use by the acquiring entity can also utilize most of the existing structures (approximately 809,800 square feet [75,200 square m]) in acceptable operating condition at the plant. This alternative would provide for mainly institutional uses with the typical example being a community college and agriculture-oriented research and development (R&D) facilities (Section 2.3). Modifications can be anticipated to some of the buildings and infrastructure depending on the specific usage. Unused agricultural land would either be held in reserve or continue to be used for agriculture until possible other future uses are identified.

Based on the typical community college/R&D example identified, utility use would most likely be less than pre-closure conditions for most areas. Water use at the site would average approximately 91,600 gpd (346,700 liters per day), or 33.4 million gallons (126.4 million liters) per year, based upon 585 persons at the facility and assuming pre-closure water needs for air conditioning and continuation of any necessary agricultural water needs. Additionally, the potential for supplying existing secondary users can continue representing an additional 16.8 million gallons (63.6 million liters) per year. Total pumpage would be approximately 50.2 million gallons (190.0 million liters) per year, or 137,534 gpd (520,622 liters per day), which would be approximately 62 million gallons (235 million liters) per year less than was used during calendar year 1994. This would provide water supply well passed the current anticipated projection of year 2020. However, it can be anticipated that the City of McGregor would utilize the available pumping capacity (62 million gallons [235 million liters] per year) to meet its current demands and reduce the amount of water being purchased from Lake Belton.

Wastewater production would continue at a maximum of 70,000 to 75,000 gpd (265,000 to 284,000 liters per day) to the City of McGregor's Sewer Plant. Existing Area M is anticipated to continue to be serviced by a sewer/septic system with discharge to an Imhoff tank. Septic tank systems/leach fields would continue to service existing Areas E, L, T, and some of the

buildings in Area G. Sewer lines leading from the remaining portions of Area G would have to be reconnected if they are to be used.

Electric usage would average 85,084 KWH/day and natural gas usage would average 519 MCF/day (15 million m³/day), consistent with pre-closure usage. Non-hazardous solid waste would average approximately two tons per day. Because most of the internal communication equipment and wiring has been removed from the majority of the buildings, new communication systems would be required as part of any of the alternative reuse options. It is anticipated that metering of the various utilities would be required at each structure to allow for proper billings.

It is not anticipated that major rehabilitation of the rail trackage throughout the plant would occur; however, some restoration of the existing rail lines located east of existing Area E could take place to allow for possible rail usage. The existing improved roadways would be capable of handling loads required for medium intensity operations. Annual maintenance can be expected to be less than what was previously required at the plant to transport heavy industrial loads to and from the plant.

Reuse Scenario III - Low Intensity

It is anticipated that low intensity use by the acquiring entity can make full use of the existing non-industrial areas (9,685 ac [3,920 ha]), which are currently leased for agricultural use. The typical example for low intensity land use consists of mainly commercial agricultural uses. Under this reuse scenario, all existing agriculture areas would continue to be used for agricultural purposes. Structures not used for maintenance, storage and warehousing of agricultural equipment, supplies, and products would remain in caretaker status to prevent deterioration.

Based on the typical commercial agriculture example identified, utility use would be expected to be much less than pre-closure usage for NWIRP McGregor. Water use would average approximately 15,340 gpd (56,070 liters per day), or 5.6 million gallons (21.2 million liters) per year, based upon 58 employees and assuming only water needs for air conditioning and continuing to supply water for agricultural uses. The potential for supplying existing secondary users can continue at existing usage rates representing an additional 16.8 million gallons (63.6 million liters) per year. Total pumpage would be approximately 22.4 million gallons (84.8 million liters) per year, or 61,370 gpd (232,300 liters per day), which would be approximately 90 million gallons (341 million liters) per year less than was used during calendar year 1994. This would provide water supply well passed the current anticipated projection of year 2020. However, it can be anticipated that the City of McGregor would utilize the available pumping capacity (90 million gallons [341 million liters] per year) to meet its current demands and reduce the amount of water being purchased from Lake Belton.

Wastewater production would be about 5,000 gpd (18,900 liters per day). This flow would either be to the City's Sewer Plant or to one of the sewer/septic systems located at the plant. The remaining systems can be either disconnected or plugged.

Electricity use would be as low as 12,800 KWH/day and natural gas use would be minimal. Non-hazardous solid waste would also be minimal. New communication systems would be required for buildings utilized for storage, processing, etc. Metering would be required for all utilities to allow for proper billings.

It is not anticipated that major rehabilitation or restoration of the rail trackage throughout the plant would occur. The existing improved roadways would be capable of handling loads typical of agricultural facilities. Annual maintenance would be expected to be much less than what was previously required at the plant to transport heavy industrial loads to and from the plant.

4.2.1.2 Earth Resources

Topography at NWIRP McGregor is mostly level to gently rolling and no impacts are anticipated for any of the reuse scenarios considered. Construction in low-lying areas along creeks would be prevented since these areas are within existing 100-year floodplains which would be regulated by existing City ordinance, Flood Damage Prevention, once they have been disposed of. Application for a Development Permit must be submitted to the City's Floodplain Administrator for review and approval prior to any anticipated construction in identified floodplains. As indicated in Section 4.1.1.5, the Navy would include appropriate notifications in the deeds of transfer for any parcels that lie within 100-year floodplains consistent with Executive Order 11988. This would assist the Floodplain Administrator in identifying those areas on the facility which would require approval under the City ordinance prior to implementation of possible future reuse.

Soil types and soil characteristics are variable across the NWIRP McGregor site. Most soils exhibit moderate erosion potential with most soils being suited for cropland and pastureland. Most soils are unsuited, or poorly-suited, to meet urban and recreational uses due to their high shrink-swell potential, stony soils, shallow rocks, and high corrosivity. Shallow soils have been impacted by chemical and waste handling practices throughout the operational life of the facility. As indicated in Section 4.1.1.6, for soils impacted by previous chemical/waste handling and operations covenants would be developed prior to property transfer to warrant that necessary remedial action has been taken or would be taken and that remediation would be performed by the Navy. The Navy would adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process. The timing of the remediation effort is dependent on the extent of the remediation efforts required and available funding. The Navy would coordinate with the future owner and/or operator of the installation and would perform all required remediation prior to facility transfer and reuse.

Any construction activities at the site for any of the reuse scenarios may temporarily increase soil erosion. Construction activities which affect more than five acres would require the acquiring entity to obtain a NPDES Storm Water Permit. Erosion problems would be minimized by implementing a Storm Water Pollution Prevention Plan (PPP) consistent with the NPDES Storm Water Permit requirements for construction activities. Recommended methods of erosion control include silt fences, hay bales, check dams, and temporary vegetation or straw cover.

Subsurface faulting is present north of NWIRP McGregor and related fault features may be present in the vicinity of NWIRP McGregor. Although these faults are not active, faulting may cause expansive shales or fractured chinks to be present at the land surface at NWIRP McGregor. Buildings, roadways, and other utilities could be impacted by the presence of expansive shales or fractured chinks. Detailed surveys should be conducted prior to any new construction that includes a large areal extent (Bayer, 1996). Impervious shallow shale layers can also cause surface water ponding which may also require construction pre-planning.

Reuse Scenario I - High Intensity

For the typical mixed use example identified, most of the existing buildings would be used in their original form, although substantial renovation of existing buildings or utilities may be implemented. This activity would not impact large-scale soil characteristics in the industrial areas, but may cause the uppermost soil layers to mix. Careful planning/engineering construction methods may mitigate for any soil constraints in the area of proposed construction. If agricultural activities continue, it is anticipated that the activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well as those which may be implemented by the acquiring entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Thus, soil erosion potential should not change in the non-industrial areas.

Site topography would be minimally altered in the case of possible site grading or construction activities. Overall elevations in the area would remain generally unchanged. No impacts to topography are expected from the continued operation and maintenance of any existing or potentially constructed facilities or from continued agricultural activities.

Construction of any new roadways and other improvements may be affected by fault displacements that may bring expansive or fractured materials to the surface. Geologic surveys may be necessary prior to any extensive facility construction to assist with project planning.

Soil impacted by previous chemical/waste handling and operations would be remediated by the Navy prior to transfer and reuse.

Reuse Scenario II - Medium Intensity

For the typical community college/R&D example identified, minimal renovation of buildings or to utilities would occur. For those areas requiring renovation, the activities would not impact large-scale soil characteristics, but may cause the uppermost soil layers to mix. If agricultural activities continue, it is anticipated that the activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well as those which may be implemented by the acquiring entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Thus, soil erosion potential should not change in the non-industrial areas.

Site topography would be minimally altered in the case of any site grading or minimal construction. Overall land surface elevations in the area would remain unchanged. No impacts to topography are expected from the continued operation and maintenance of any existing or potentially constructed facilities or from continued agricultural activities.

Construction of any new roadways and other improvements may be affected by fault displacements that may bring expansive or fractured materials to the surface. Geologic surveys may be necessary prior to any extensive facility construction to assist with project planning.

Soil impacted by previous chemical/waste handling and operations would be remediated by the Navy prior to transfer and reuse.

Reuse Scenario III - Low Intensity

Construction-related impacts would not occur as a result of the typical commercial agriculture example identified, although some minor demolition of existing structures may occur. Agricultural activities may increase in intensity relative to those established during previous operations. It is anticipated that the agricultural activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well as those which may be implemented by the acquiring entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Thus, soil erosion potential should not change in the non-industrial areas.

Necessary land surface elevations in the area would remain generally unchanged. No impacts to topography would be expected from agricultural operations or operation of any agriculturally related facilities.

Soils potentially impacted by previous chemical/waste handling and operations would be remediated by the Navy prior to transfer reuse.

4.2.1.3 Air Resources

NWIRP McGregor is located in an area which is in attainment for all priority air pollutants.

Reuse Scenario I - High Intensity

For the typical mixed use example identified, all facilities and undeveloped land have the potential to be reused. Planned industrial-type operations, construction of new facilities and renovation of existing facilities have the potential to affect local air quality as follows.

Construction activities would affect short-term air quality by causing fugitive dust emissions and contributing to vehicle, heavy equipment, and mobile power generator exhaust emissions. Estimates of fugitive dust and exhaust emissions can not be made for each reuse scenario since the specifics of construction are not defined at this time.

The major air quality concerns during construction and demolition are:

- Fugitive dust from on-site construction activities;
- Asbestos that may need to be removed from buildings that would be demolished; and,
- Mobile source emissions from construction vehicles and equipment and motor vehicles of the commuting construction workers.

Fugitive dust from construction and demolition activities can be prevented from becoming airborne through adherence to any local ordinances and implementation of the following measures:

- Use of water to control dust generated by the demolition of existing buildings or structures, construction operations, and during the clearing and grading of land;
- Application of water to dirt paths, gravel roads, materials, stockpiles, and other surfaces that can produce airborne dust over extended periods; and,
- Periodic street sweeping and/or wetting down of paved roadway surfaces.

Modern methods of emission control and dust emission prevention would help mitigate construction-related air pollution. Dust generated by construction can also be controlled by watering of work areas. Construction machinery exhaust emissions would have negligible effect on the ambient air quality.

Construction activities would also emit volatile organic compounds (VOCs) and nitrogen oxides (NOx), which are precursors of ozone. Potential construction activities include the use of construction equipment, the movement of fill by truck for site grading, the use of paving equipment, the mobilization of trucks necessary to re-stripe parking lots, curing asphalt pavement, the use of gasoline powered equipment, and construction workers commuting to the site. These effects are estimated to be of relatively short duration and of moderate intensity and are not anticipated to affect regional air quality.

Future stationary sources of air pollution due to the reuse of NWIRP McGregor would be of two general types: those resulting from fuel combustion and those resulting from industrial processes. Since the expected operations by the acquiring entity may be similar to those which occurred during pre-closure conditions, it is anticipated that the air emissions would also be similar. In general, the emissions from these sources would be minor and permits would be required for the acquiring entity and/or its tenants to comply with state regulations governing stationary source emissions. The receiving entity would be responsible for obtaining all necessary air permits. For this reason, an increased impact to air resources from future stationary sources associated with the mixed use scenario is not anticipated. Air emissions from agricultural activities would be consistent with pre-closure activities.

The number of people to be employed at the converted NWIRP McGregor is estimated at 1,267 persons, which would be comparable to historic employment levels when Hercules Inc./Alliant Techsystems was in full production. For this reason, air quality impacts caused by employees traveling to and from work would not impact existing air quality.

The high intensity reuse scenario would not adversely affect air quality since the facility would be operated in compliance with all Federal, state, and local requirements sufficient to control air emissions. The area is anticipated to remain in attainment for all priority air pollutants. The effect of implementation of new PM and ozone standards on the area can not be determined until comprehensive monitoring has been performed. For PM, the EPA will issue "unclassifiable" designations for PM_{2.5} for all areas in 1999. The EPA and State Governors will not be able to make the first determinations about which areas should be redesignated from unclassifiable to nonattainment status until 2002, or later. Upon being designated as a nonattainment area, States will have three years to develop pollution control plans and submit them to the EPA demonstrating how they will meet the standard. For ozone, the EPA will work with State Governors to designate areas as nonattainment for ozone by the year 2000 and areas will have until the year 2003 to develop and submit State Implementation Plans (SIPs) to provide for attainment of the new standard.

Reuse Scenario II - Medium Intensity

For the typical community college/R&D example identified, most of the facilities and undeveloped land also have the potential to be reused. Planned community college/R&D operations, construction of new facilities and renovation of existing facilities have the potential to affect local air quality as follows.

Construction activities would affect short-term air quality by causing fugitive dust emissions and contributing to vehicle, heavy equipment, and mobile power generator exhaust emissions. Estimates of fugitive dust and exhaust emissions can not be made for each reuse scenario since the specifics of construction are not defined at this time.

The major air quality concerns during construction and demolition are:

- Fugitive dust from on-site construction activities;
- Asbestos that may need to be removed from buildings that would be demolished; and,
- Mobile source emissions from construction vehicles and equipment and motor vehicles of the commuting construction workers.

Fugitive dust from construction and demolition activities can be prevented from becoming airborne through adherence to any local ordinances and implementation of the following measures:

- Use of water to control dust generated by the demolition of existing buildings or structures, construction operations, and during the clearing and grading of land;
- Application of water to dirt paths, gravel roads, materials, stockpiles, and other surfaces that can produce airborne dust over extended periods; and,
- Periodic street sweeping and/or wetting down of paved roadway surfaces.

Modern methods of emission control and dust emission prevention would help mitigate construction-related air pollution. Dust generated by construction can also be controlled by watering of work areas. Construction machinery exhaust emissions would have negligible effect on the ambient air quality.

Construction activities would also emit volatile organic compounds (VOCs) and nitrogen oxides (NOx), which are precursors of ozone. Potential construction activities include the use of construction equipment, the movement of fill by truck for site grading, the use of paving

equipment, the mobilization of trucks necessary to re-stripe parking lots, curing asphalt pavement, the use of gasoline powered equipment, and construction workers commuting to the site. These effects are estimated to be of relatively short duration and of moderate intensity and are not anticipated to affect regional air quality.

Implementation of the typical community college/R&D example identified would potentially decrease the number of air emission sources and the volume of pollutants discharged. Vehicular and railcar traffic would result in a decrease of air emissions. In general, the emissions from these sources would be minor and permits may be required for the acquiring entity and/or its tenants to comply with state regulations governing stationary source emissions. The receiving entity would be responsible for obtaining all necessary air permits. For this reason, an increased impact to air resources from future stationary sources associated with the community college/R&D scenario is not anticipated. Air emissions from agricultural activities would be consistent with pre-closure activities.

The number of people potentially located at the redeveloped facility is estimated at 585 persons, which would be comparable to the workforce located at NWIRP McGregor prior to closure of operations by Hercules Inc./Alliant Techsystems. For this reason, air quality impacts caused by employees traveling to and from the site would not impact existing air quality.

The medium intensity reuse scenario would not adversely affect air quality since the facility must be operated in compliance with all Federal, state, and local requirements sufficient to control air emissions. The area is anticipated to remain in attainment for all priority air pollutants. The effect of implementation of new PM and ozone standards on the area can not be determined until comprehensive monitoring has been performed. For PM, the EPA will issue "unclassifiable" designations for PM_{2.5} for all areas in 1999. The EPA and State Governors will not be able to make the first determinations about which areas should be redesignated from unclassifiable to nonattainment status until 2002, or later. Upon being designated as a nonattainment area, States will have three years to develop pollution control plans and submit them to the EPA demonstrating how they will meet the standard. For ozone, the EPA will work with State Governors to designate areas as nonattainment for ozone by the year 2000 and areas will have until the year 2003 to develop and submit State Implementation Plans (SIPs) to provide for attainment of the new standard.

Reuse Scenario III - Low Intensity

For the typical commercial agriculture example identified, all air emission sources existing prior to the cease of industrial operations at the facility, except those associated with continued agricultural use, would be eliminated. Thus, over-all air emissions would substantially decrease relative to conditions caused by the previous full production at NWIRP McGregor. Little or no new construction or renovation would take place. Any construction activities

anticipated would be short-term and of moderate intensity. These activities are not anticipated to affect regional air quality.

Impacts to air quality from continued agricultural activities on the property, although expected to possibly increase, would be non-detectable. Crop-duster distribution of pesticides/herbicides, if used, can cause local air quality impacts and fugitive dust emissions would increase during harvest periods. However, air quality impacts would be expected to be less than experienced during the operation by Hercules Inc./Alliant Techsystems including employee (58 estimated) travel to and from work. As a result, a beneficial impact on ambient air quality, although classified as in attainment for all criteria, would be realized. All priority pollutants are expected to stay in attainment with Federal and state standards.

The effect of implementation of new PM and ozone standards on the area can not be determined until comprehensive monitoring has been performed. For PM, the EPA will issue "unclassifiable" designations for PM_{2.5} for all areas in 1999. The EPA and State Governors will not be able to make the first determinations about which areas should be redesignated from unclassifiable to nonattainment status until 2002, or later. Upon being designated as a nonattainment area, States will have three years to develop pollution control plans and submit them to the EPA demonstrating how they will meet the standard. For ozone, the EPA will work with State Governors to designate areas as nonattainment for ozone by the year 2000 and areas will have until the year 2003 to develop and submit State Implementation Plans (SIPs) to provide for attainment of the new standard.

4.2.1.4 Noise

Reuse Scenario I - High Intensity

The implementation of the mixed use scenario may require construction, renovation and demolition of existing facilities. Short-term impacts on community noise levels during construction of the proposed project would include noise from construction equipment and noise from construction vehicles/delivery vehicles traveling to and from the site. The level of impact of these noise sources depends on the noise characteristics of the equipment and the activities involved, the construction schedule, and the location of potentially sensitive noise receptors. Construction-related equipment noise levels generally range from 76 dB for hoist operations, 85 dB for backhoe operations, to a maximum of 101 dB for pile driver operations.

Noise levels at a given receptor location due to the proposed construction activities would vary widely, depending on the phase of construction, demolition, land clearing and excavations, foundation and capping, erection of structural steel, construction of exterior walls, etc., and the specific tasks undertaken. Some increased noise levels due to these activities at the site are anticipated to be perceptible to the nearby residential neighborhoods during the construction period. To minimize the potential impacts of construction noise to the surrounding area, the

acquiring entity and/or its tenants should limit the erection, demolition, alteration, or repair of any building, or the excavation associated with construction to daylight hours when occasional loud noises are more tolerable, consistent with City of McGregor Code ("Noise", Chapter 11, Article 2). Because of the relatively short-term exposure periods anticipated to be imposed on any one receiver during the potential construction phases, extended disruption of normal activities is not considered likely. However, provisions should be incorporated in project plans and specifications to require the contractor(s) to make every reasonable to minimize construction noise through abatement measures such as work hour controls and maintenance of equipment muffler systems.

Operational noise levels from industrial activities at the converted NWIRP McGregor are anticipated to be similar to or less than those experienced under pre-closure conditions. For general activities this ranged from approximately 50 dB to 80 dB, depending on separation distance. If rocket motor testing were to continue, impulsive noise that measures 145 dB at 800 feet (244 m) could be expected. Pre-closure conditions, including rocket motor testing, consisted of no noise complaints being made with respect to NWIRP McGregor operations (City of McGregor, 1995b). Any high intensity sound levels (rocket motor testing) are anticipated to continue to be confined to the areas which previously generated high intensity noise, Areas L and R, similar to pre-closure operations. Noise levels in the non-industrial areas would continue be mostly grounds maintenance and agricultural activities, and would remain in compliance with city code. Any new external mechanical equipment (e.g., fans, compressors) added to facility structures must be designed to comply with the city code. As a result, noise levels from such mechanical equipment at the facility are not expected to impact the area.

The final user(s) of the facility would be responsible for implementing appropriate noise abatement for planned operations. Ambient operational noise levels would be similar to that which occurred during Hercules Inc./Alliant Techsystems plant production and nearby receptors would not be expected to be impacted.

Reuse Scenario II - Medium Intensity

The implementation of the typical community college/R&D example may also require some construction, renovation and demolition of existing facilities. Short-term impacts on community noise levels during construction of the proposed project would also include noise from construction equipment and noise from construction vehicles/delivery vehicles traveling to and from the site as discussed for the mixed use example. To minimize the potential impacts of construction noise to the surrounding area, the acquiring entity and/or its tenants should limit the erection, demolition, alteration, or repair of any building, or the excavation associated with construction to daylight hours when occasional loud noises are more tolerable, consistent with City of McGregor Code ("Noise", Chapter 11, Article 2). Because of the relatively short-term exposure periods anticipated to be imposed on any one receiver during the potential construction phases, extended disruption of normal activities is not considered likely. However,

provisions should be incorporated in project plans and specifications to require the contractor(s) to make every reasonable effort to minimize construction noise through abatement measures such as work hour controls and maintenance of equipment muffler systems.

Operational noise levels from the typical community college/R&D activities at the converted NWIRP McGregor are anticipated to be less than those experienced under pre-closure conditions. Rocket motor testing would not occur and the noise environment would be positively benefited by the cessation of these test procedures. In general, noise levels generated during a community college or R&D reuse would be expected to substantially decrease relative to pre-closure operations. Noise levels in the non-industrial areas would continue to be mostly grounds maintenance and agricultural activities, and would remain in compliance with city code. Any new external mechanical equipment (e.g., fans, compressors) added to facility structures must be designed to comply with the city code. As a result, noise levels from such mechanical equipment at the facility are not expected to impact the area.

Reuse Scenario III - Low Intensity

For the typical commercial agriculture example identified, a decrease in the number of noise sources and generation rates would occur, resulting in a decrease in ambient noise levels relative to the pre-closure operations at NWIRP McGregor. Noise levels in the non-industrial areas would continue to be mostly grounds maintenance and agricultural activities, and would remain in compliance with city code. The noise caused by agricultural activities would generally consist of equipment transport, cultivation, harvesting and equipment maintenance. These activities are consistent with adjacent uses in most areas and would not be appreciable compared to the noise generated during pre-closure operations. Rocket motor missile testing would not occur during low intensity reuse, which would result in a positive impact to the noise environment.

4.2.1.5 Water Resources

4.2.1.5.1 Surface Water and Floodplains

Construction in low-lying areas along creeks would be discouraged since these areas are within existing 100-year floodplains which would be regulated by existing City ordinance, Flood Damage Prevention, once they have been disposed of. Application for a Development Permit must be submitted to the City's Floodplain Administrator for review and approval prior to any anticipated construction in identified floodplains. As indicated in Section 4.1.1.5, the Navy would include appropriate notifications in the deeds of transfer for any parcels that lie within 100-year floodplains consistent with Executive Order 11988. This would assist the Floodplain Administrator in identifying those areas on the facility which would require approval under the City ordinance prior to implementation of possible future reuse.

Reuse Scenario I - High Intensity

For the typical mixed use example identified, an increase in soil erosion to area streams can be experienced during any demolition or construction activities associated with redevelopment of NWIRP McGregor. If more than five acres are disturbed during construction, an NPDES permit would be required. The NPDES permit requires the implementation of a stormwater pollution prevention plan which would minimize the amount of sediments in stormwater.

During operations, impacts to water resources may occur through runoff from impervious surfaces such as buildings, parking lots and cleared areas. Best management practices should be implemented by the acquiring entity to minimize these impacts. Impacts to surface water during operations would possibly be equivalent or less than those caused by the pre-closure operations at NWIRP McGregor. During pre-closure operations, stormwater discharges at NWIRP McGregor were managed in accordance with all Federal, state, and local NPDES regulations. The NPDES regulations require that a subject facility, such as NWIRP McGregor, apply for either a group or a general permit to manage stormwater. It is anticipated that the acquiring entity would obtain the required permits to operate the mixed use scenario consistent with the various regulations. Thus, it is expected that no untreated sanitary or process waters would be discharged directly to surface or groundwater. Process wastewaters may require pre-treatment prior to discharge to the local wastewater treatment plant. Wastewater discharged from the City's wastewater treatment plant would be expected to be in compliance with all local, state, and Federal discharge standards. Therefore, surface water resources would not be expected to be impacted as a result of operations that would occur as part of the typical mixed use example.

Reuse Scenario II - Medium Intensity

For the typical community college/R&D example identified, impacts to surface water during proposed operations would be less than that described by pre-closure conditions. Although not expected, during facility construction or demolition, impacts to surface water may occur from run-off and sedimentation as a result of site construction or demolition activities. If more than five acres are disturbed during construction, an NPDES permit would be required. The NPDES permit requires the implementation of a stormwater pollution prevention plan which would minimize the amount of sediments in stormwater.

It is anticipated that the acquiring entity would obtain the any required permits to operate the community college/R&D scenario consistent with the various Federal, state and local NPDES regulations. Thus, it is expected that no untreated sanitary or process waters, if any, would be discharged directly to surface or groundwater. Wastewater discharged from the City's wastewater treatment plant would be expected to be in compliance with all local, state, and Federal discharge standards. Therefore, surface water resources would not be expected to be

impacted as a result of operations that would occur as part of the community college/R&D example.

Reuse Scenario III - Low Intensity

During agricultural operations, impacts to water resources as a result of the typical commercial agriculture example identified can occur through increased runoff from cleared field areas. It is anticipated that the agricultural activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well as those which may be implemented by the acquiring entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices. Thus, soil erosion potential should not change in the non-industrial areas. Chemicals used during agricultural operations may also impact surface waters, although this effect is anticipated to be minimal since the chemicals applied are anticipated to be carefully handled by certified personnel according to label directions consistent with established agricultural practices in the area.

During agricultural operations, stormwater may become contaminated with air emissions produced by tractors or other diesel powered vehicles; however, impacts to surface water would be minor. Irrigation water would be supplied from shallow water sources or the facility's water supply system which would be of sufficient quality for irrigation. It would be expected that no untreated agricultural process waters would be discharged directly to surface waters or to groundwater.

4.2.1.5.2 Groundwater

Reuse Scenario I - High Intensity

Groundwater pumping volumes for the typical mixed use example identified would most likely be less than rates that occurred during full production of NWIRP McGregor which was estimated at 112 million gallons (424 million liters) per year. Water use at the site is anticipated to average approximately 169,300 gpd (640,900 liters per day), or 61.8 million gallons (233.9 million liters) per year, based upon 1,267 employees and assuming water needs for air conditioning and possible agricultural use. Additionally, the potential for supplying existing secondary users can continue representing an additional 16.8 million gallons (63.6 million liters) per year. Total pumpage would be approximately 78.6 million gallons (297.5 million liters) per year, or 215,342 gpd (815,134 liters per day), which would be approximately 33 million gallons (125 million liters) per year less than was used during calendar year 1994. This would provide water supply well past the current anticipated projection of year 2020. However, it can be anticipated that the City of McGregor would utilize the available pumping capacity (33 million gallons [125 million liters] per year) to meet its current demands and reduce the amount of water being purchased from Lake Belton.

Impacts to groundwater during operations are anticipated to be similar to pre-closure conditions. As indicated in Section 3.1.5, the wells located at NWIRP McGregor pump from the Hensel aquifer, which has been identified to have relative good water quality. Also, a chemical analysis was conducted for water samples from the three wells located at NWIRP McGregor to determine compliance with SDWA standards. The water was found to be within the limits of the primary and secondary standards of SDWA. It is not anticipated that the operations projected as part of the mixed use scenario would result in any new impact to groundwater quality based upon past activities in the area and expected adherence to Federal, state and local NPDES requirements by the acquiring entity. Additionally, prior to the disposal of NWIRP McGregor property, there would be environmental remediation of the contaminated areas by Navy. Thus, a long-term beneficial impact to earth resources would occur as the remediation process removes contaminants from soils and shallow groundwater.

Reuse Scenario II - Medium Intensity

For the typical community college/R&D example, water use at the site would average approximately 91,600 gpd (346,700 liters per day), or 33.4 million gallons (126.4 million liters) per year, based upon 585 persons at the facility and assuming only pre-closure water needs for air conditioning and possible agricultural needs. Additionally, the potential for supplying existing secondary users can continue representing an additional 16.8 million gallons (63.6 million liters) per year. Total pumpage would be approximately 50.2 million gallons (190.0 million liters) per year, or 137,534 gpd (520,610 liters per day), which would be approximately 62 million gallons (235 million liters) per year less than was used during calendar year 1994. This would provide water supply well past the current anticipated projection of year 2020. However, it can be anticipated that the City of McGregor would utilize the available pumping capacity (62 million gallons [235 million liters] per year) to meet its current demands and reduce the amount of water being purchased from Lake Belton.

Impacts to groundwater during operations are anticipated to be less than pre-closure conditions. As indicated in Section 3.1.5, the wells located at NWIRP McGregor pump from the Hensel aquifer, which has been identified to have relative good water quality. The water from the three wells located at NWIRP McGregor have been determined to be in compliance with SDWA standards. It is not anticipated that the operations projected as part of the typical community college/R&D example would result in any new impact to groundwater quality based upon past activities in the area and expected adherence to Federal, state and local NPDES requirements by the acquiring entity. Additionally, prior to the disposal of NWIRP McGregor property, there would be environmental remediation of the contaminated areas by Navy. Thus, a long-term beneficial impact to earth resources would occur as the remediation process removes contaminants from soils and shallow groundwater.

Reuse Scenario III - Low Intensity

For the typical commercial agricultural example, water use would average approximately 15,340 gpd (56,070 liters per day), or 5.6 million gallons (21.2 million liters) per year, based upon 58 employees and assuming only water needs for air conditioning and continuing to supply water for agricultural uses. The potential for supplying existing secondary users can continue at existing usage rates representing an additional 16.8 million gallons (63.6 million liters) per year. Total pumpage would be approximately 22.4 million gallons (84.8 million liters) per year, or 61,370 gpd (232,300 liters per day), which would be approximately 90 million gallons (341 million liters) per year less than was used during calendar year 1994. This would provide water supply well past the current anticipated projection of year 2020. However, it can be anticipated that the City of McGregor would utilize the available pumping capacity (90 million gallons [341 million liters] per year) to meet its current demands and reduce the amount of water being purchased from Lake Belton.

Impacts to groundwater during operations are anticipated to be less than pre-closure conditions. As indicated in Section 3.1.5, the wells located at NWIRP McGregor pump from the Hensel aquifer, which has been identified to have relative good water quality. The water from the three wells located at NWIRP McGregor have been determined to be in compliance with SDWA standards. It is not anticipated that the operations projected as part of the typical commercial agricultural example would result in any new impact to groundwater quality based upon past activities in the area and expected adherence to Federal, state and local NPDES requirements by the acquiring entity. Additionally, prior to the disposal of NWIRP McGregor property, there would be environmental remediation of the contaminated areas by Navy. Thus, a long-term beneficial impact to earth resources would occur as the remediation process removes contaminants from soils and shallow groundwater.

4.2.1.6 Hazardous Materials/Waste

Reuse Scenario I - High Intensity

For the typical mixed use example identified, the quantity of hazardous substances estimated to be required for operations would be expected to be somewhat equivalent to what was used when NWIRP McGregor was in full production, although the nature of the hazardous substances present may change (i.e., there may be a lesser volume of explosive-type materials present). Given the nature of ever-expanding national and state environmental regulation and compliance standards, requirements for hazardous materials and waste management are expected to change and the overall regulatory burden would increase. Environmental compliance activities would continue for storage tanks, hazardous substances and hazardous wastes, PCBs, asbestos, stormwater management, and NPDES permits. The future owner(s)/operator(s) would be responsible for the management of hazardous materials and wastes used, handled, recycled or disposed of from the site. The types of materials handled

during these activities can be expected to be hazardous and/or industrial non-hazardous in nature. The appropriate waste handling, storage and disposal permits must be obtained from the EPA and TNRCC prior to facility operation. Individuals responsible for facility operation must use, handle, transport and dispose of these materials according to DOT, TSCA, OSHA, EPA regulations, and TNRCC rules and regulations.

Pesticides and herbicides could be used in quantities similar to baseline (pre-closure) conditions. These substances are anticipated to be administered in compliance with the appropriate state and Federal regulations, including the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The impact of these substances on the environment would be expected to be localized and temporary in nature, if any.

Reuse Scenario II - Medium Intensity

Overall, on-site activities for the typical community college/R&D example identified would generate a decreased amount of hazardous waste compared to pre-closure conditions. Environmental compliance activities are anticipated to continue for storage tanks, hazardous substances and hazardous wastes, PCBs, asbestos, and stormwater management consistent with Federal, state and local regulations. The appropriate waste handling, storage and disposal permits must be obtained from the EPA and TNRCC prior to facility operation. The future owner(s)/operator(s) would be responsible for the management of hazardous materials and wastes used, handled, recycled or disposed of from the site. The types of materials handled during these activities can be expected to be hazardous and/or industrial non-hazardous in nature. Responsible individuals must use, handle, transport and dispose of these materials according to DOT, TSCA, OSHA, EPA regulations, and TNRCC rules and regulations.

Pesticides and herbicides could be used in quantities similar to baseline (pre-closure) conditions. These substances are anticipated to be administered in compliance with the appropriate state and Federal regulations, including FIFRA. The impact of these substances on the environment would be expected to be localized and temporary in nature, if any.

Reuse Scenario III - Low Intensity

For the typical commercial agriculture example identified, an overall decreased amount of hazardous waste can be expected compared to pre-closure conditions. Pesticides and herbicides can be expected to be used in quantities similar to or greater than formerly present during the operation of NWIRP McGregor. These substances are anticipated to be administered in compliance with the appropriate state and Federal regulations, including FIFRA. The impact of these substances on the environment would be expected to be localized and temporary in nature, if any.

4.2.1.7 Historical and Archeological Resources

As indicated in Section 3.1.7, Buildings 105, 106, 300, 601, 602, 603, 711, 712, 1201, 1237, 2301, 2308, and 2309, along with parts of the High Explosive Magazine Area (Buildings 8001 through 8064) at NWIRP McGregor have been identified as eligible for the NRHP. Additionally, an archeological reconnaissance survey identified one prehistoric component (41ML254) and 13 historic components (41CV1604, 41CV1606, 41CV1609, 41CV1610, 41ML239, 41ML240, 41ML241, 41ML243, 41ML245, 41ML247, 41ML248, 41ML252, and 41ML254) as being potentially eligible for listing on the NRHP.

Because the proposed action being considered could result in the transfer of the eligible historic properties to other entities, the SHPO recommended that a Memorandum of Agreement (MOA) be prepared including appropriate deed covenants providing for SHPO review of character altering exterior alternations to those eligible buildings which could potentially be transferred. The SHPO also recommended that prior to any demolition or transfer, the Navy complete and submit Historic American Buildings Survey Level III (HABS Level III) survey documentation for each property type. This documentation will create a permanent record of the buildings and structures that played important roles in the successful operation of NWIRP McGregor. This documentation will mitigate possible impacts from potential alternations or demolition to eligible properties. The HABS Level III documentation was completed in September 1997 and has been accepted by the SHPO as completion of the Section 106 process (see correspondence in Section 5.0 - THC letters of September 16 and November 6, 1997).

Additionally, the SHPO has also reviewed the archeological survey report and recommended that, if the property is to be transferred, the Navy and the acquiring entity agree to transfer the NWIRP McGregor property with a protective covenant that includes adequate conditions to ensure the preservation of the property's significant archeological features (see correspondence in Section 5.0 - THC letter of June 24, 1996). The Navy will incorporate protective covenants for both historic and archeological resources into the MOA which will be completed prior to any permanent transfer of the property (U.S. Navy, 1998d).

4.2.2 Biological Resources

4.2.2.1 Vegetation

Reuse Scenario I - High Intensity

For the typical mixed use example identified, operations would generally be comparable with the previous operational conditions of the NWIRP facility and only short-term or minimal impact to the vegetation is expected. Some minimal permanent vegetation loss could occur within the croplands, open grassland, and maintained grass areas during any proposed construction and conversion activities. These activities could also result in some short-term

impact to vegetation, but those areas that are not permanently converted would be expected to re-vegetate naturally.

The minimal and short-term impacts to vegetation can be limited and/or mitigated further through the use of appropriate best management practices during and subsequent to construction and conversion activities. Some of the more common best management practices include the following:

- Minimization of work area;
- Erosion and siltation controls; and
- Full or partial revegetation in disturbed areas.

If agricultural activities continue, it is anticipated that the activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well as those which may be implemented by the acquiring entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices.

Reuse Scenario II - Medium Intensity

Under the typical community college/R&D example identified, the majority of the existing structures can be utilized. Some retrofitting and conversion activities would be expected for the purpose of accommodating the various institutional uses as described in Section 2.2. Some minimal and short term impact to vegetation could occur within the eastern portion of the site similar to those as described for the high intensity land use scenario. This typical example would also include agriculture-oriented research with development facilities and possible experimental farmland located principally in the western portion of the site. It is expected that little or no impact to the vegetation resources would result from this use due to the fact that the majority of the area designated for this use is presently used for agricultural and cattle grazing activities. The best management practices presented previously can be used to help further limit and/or mitigate vegetation impacts from the medium intensity land use. It is anticipated that agricultural activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well as those which may be implemented by the acquiring entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices.

Reuse Scenario III - Low Intensity

For the typical commercial agriculture example identified, little to no new impact to vegetation is anticipated since the use would occur within areas currently under or previously subjected to agricultural production. It is anticipated that agricultural activities would continue to be required to comply with the conservation provisions of the Food Security Act of 1985 as well

as those which may be implemented by the acquiring entity. This includes rotation of crops, conservation tillage, contour farming, and continued implementation of prudent erosion and debris control practices.

4.2.2.2 Wildlife

Reuse Scenario I - High Intensity

For the typical mixed use example identified, minimal impacts to aquatic and terrestrial wildlife species would occur. These impacts are similar to those that occurred under the previous NWIRP operations, with the exception of any new construction and conversion activities. Facility conversion activities are expected to result in displacement of some terrestrial species (small mammals and reptiles mostly), but it is anticipated that many of the species would relocate to adjacent less disturbed areas. The possible conversion of existing agricultural leases to open spaces and recreational areas would provide for more available and diverse wildlife habitat. Maintenance of existing designated wildlife management areas at the site would serve to compensate for minimal displacement impacts.

Reuse Scenario II - Medium Intensity

Implementation of the typical community college/R&D example identified would result in minimal displacement of some species due primarily to conversion activities. It is expected that many of the species would relocate to less disturbed areas as described above under the high intensity land use alternative. The conversion of existing agricultural leases to open space and recreational areas would provide for more available and diverse wildlife habitat compensating for the displacement impacts.

Reuse Scenario III - Low Intensity

For the typical commercial agriculture example identified, little to no new impact to vegetation is anticipated since the use would occur within areas currently under or previously subjected to agricultural production. It is expected that displaced wildlife species, if any, would relocate to nearby less disturbed areas, such as open grassland and riparian areas if necessary.

4.2.2.3 Threatened and Endangered Species

The potential for occurrence of any of the listed species as year round residents at NWIRP McGregor is unlikely due primarily to the absence of preferred habitat, on-going agricultural activities, and caretaker maintenance activities (i.e., mowing). There would be no impact to threatened or endangered flora and fauna as a result of the implementation of any of the reuse scenarios evaluated.

4.2.2.4 Sensitive Habitats

Reuse Scenario I - High Intensity

It is anticipated that the typical mixed use example identified would result in little to no impact to sensitive habitats (intermittent streams, riparian corridors, wetlands, and wildlife management areas) since the projected activities would be similar to or less than those which occurred as part of pre-closure operations. However, should impacts be identified to occur in the sensitive habitats, then coordination with various Federal and state agencies should be initiated prior to performing the work to determine compliance with Federal and state laws. Coordination with the USACE should occur under Section 404 of the Clean Water Act regarding wetlands and other bodies of water. Coordination with the TNRCC should also occur regarding work in bodies of water. In addition, the USFWS and TPWD should be consulted regarding work in riparian habitat and wildlife management areas.

Absent statutory authority, Navy cannot impose restrictions on the future use of this surplus Federal property. Navy would, however, include appropriate notifications in the deeds of transfer for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.) if the property is disposed of.

Reuse Scenario II - Medium Intensity

Little to no impact to sensitive habitats should occur as a result of the typical community college/R&D example identified since the projected activities would be similar to or less than those which occurred as part of pre-closure operations. However, should impacts be identified to occur in the sensitive habitats, then coordination with various Federal and state agencies should be initiated prior to performing the work to determine compliance with Federal and state laws. Coordination with the USACE should occur under Section 404 of the Clean Water Act regarding wetlands and other bodies of water. Coordination with the TNRCC should also occur regarding work in bodies of water. In addition, the USFWS and TPWD should be consulted regarding work in riparian habitat and wildlife management areas.

Absent statutory authority, Navy cannot impose restrictions on the future use of this surplus Federal property. Navy would, however, include appropriate notifications in the deeds of transfer for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.) if the property is disposed of.

Reuse Scenario III - Low Intensity

Implementation of the typical commercial agriculture example identified should result in little to no impact to sensitive habitats since the projected activities would be similar to or less than those which occurred as part of pre-closure operations. However, should impacts be identified

to occur in the sensitive habitats, then coordination with various Federal and state agencies should be initiated prior to performing the work to determine compliance with Federal and state laws. Coordination with the USACE should occur under Section 404 of the Clean Water Act regarding wetlands and other bodies of water. Coordination with the TNRCC should also occur regarding work in bodies of water. In addition, the USFWS and TPWD should be consulted regarding work in riparian habitat and wildlife management areas.

Absent statutory authority, Navy cannot impose restrictions on the future use of this surplus Federal property. Navy would, however, include appropriate notifications in the deeds of transfer for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.) if the property is disposed of.

4.2.3 Socioeconomic Resources

4.2.3.1 Community Setting and Region of Influence

The implementation of any of the reuse scenarios developed are not anticipated to impact the basic infrastructure of the City of McGregor or the surrounding areas. The community setting should remain the same as well. Resulting increases or decreases in the population should also not influence census tracts or election districts. The transportation network and utility infrastructure in McGregor are not expected to be impacted by any reuse scenario. The geographic ROI is not anticipated to change as a result of implementation of any of the reuse scenarios.

4.2.3.2 Demographics

Reuse Scenario I - High Intensity

Implementation of the typical mixed use example identified would provide the optimum employment opportunity which could ultimately result in a population increase of 279 adult persons to the McGregor area. This supposition is based on the potential number of jobs (1,267) which would be created under this alternative and the employee residence distribution when Hercules Inc./Alliant Techsystems operated NWIRP McGregor. It is not anticipated that the implementation of this reuse scenario would impact the demographic profile of the McGregor community. Racial distribution, median age, and average family size would follow the same patterns prior to NWIRP McGregor's closure.

Reuse Scenario II - Medium Intensity

Under the typical community college/R&D example identified, the McGregor area would attract a younger, college-age population. A more specific example of this type of example is the McLennan Community College located in Waco. An increase in the population of

approximately 129 persons is anticipated to occur. This is based on the potential number of jobs/students which could be created under this type reuse scenario and a comparison of the employee location distribution when NWIRP McGregor was in operation. It is not anticipated that the implementation of this reuse scenario would impact the demographic profile of the McGregor community. Racial distribution, median age, and average family size would follow the same patterns as pre-closure conditions. The largest age group in the community would remain the 25-44 years group. The average age of the community college student population would be approximately 25 years (McLennan Community College, 1996).

Reuse Scenario III - Low Intensity

Under the typical commercial agriculture example identified, there would be a potential for the population to decrease because of limited demand for labor. The new demographic profile would most likely reflect one of a rural or farming community rather than one influenced by industrial activity. This typical example would reflect a lower-income demographic profile as well.

4.2.3.3 Economic Activity

Reuse Scenario I - High Intensity

Under the typical mixed use example identified, most buildings and undeveloped land could be reused. It is envisioned that a phased approach for development would occur under this typical example. The first phase of development can be expected to occur in the eastern sector of the NWIRP McGregor facility. This area would be available for immediate reuse for administrative, light industrial, or commercial establishments.

Development of the western sector can be expected to occur as Phase 2. Economic development in this section of the NWIRP McGregor facility would consist of medium and heavy industrial activity. Light to medium industry and warehousing and storage would contribute to the economy as well.

Phase 3 would provide for agricultural and reserve economic development. This type development would occur in areas which are open with no physical structures. Additionally, a public park could be developed in existing Area S or in the NE-Central area next to existing Area A.

Reuse Scenario II - Medium Intensity

Implementation of the typical community college/R&D example identified would result in a more diverse economic base for McGregor. If this typical example follows a similar pattern of the McLennan Community College, the institution could initially service approximately 300

students per semester. This would initially generate approximately \$330,000 in tuition revenue per year at an average cost of \$550 per semester (McLennan Community College, 1997). The remainder of the facility would promote economic development in the form of agriculture-oriented research and development.

Indirect and support services would be reflective of retail and commercial businesses rather than manufacturing. Service and retail type businesses would result in an increase of sales tax base for the community.

Reuse Scenario III - Low Intensity

Implementation of the typical commercial agriculture example identified could lower the City's tax base. Agricultural land use is taxed at a lower rate than industrial, commercial or residential. Additionally, fewer employment opportunities could equate to fewer households. City revenue from personal property taxes as well as school taxes could also be negatively affected if fewer people lived in the McGregor community.

4.2.3.4 Employment

Reuse Scenario I - High Intensity

Implementation of the typical mixed use example identified has the potential to create the greatest number of jobs because of the diversity of employment opportunities. The types of jobs which could be created under this typical example include administrative, commercial, industrial (light to heavy), manufacturing, and agricultural. An estimated total of 1,267 persons could be employed under this typical example based on a ratio of persons per square foot (0.09 sm) of different types of building use categories. Using these ratios, approximately 770 persons could be employed for administrative, light industrial, commercial and maintenance type work during the Phase I business development stage. Approximately 447 persons could be employed during the Phase II business development stages for jobs representing light, medium, and heavy industry and storage and warehousing. Phase III development of park and open space (agriculture) could potentially employ 50 persons (agricultural employment is based on an employees per acre ratio).

Reuse Scenario II - Medium Intensity

Implementation of the typical community college/R&D example identified could result in as many as 285 jobs. This consists of a staff of approximately 190 for the community college, 45 R&D jobs, and 50 agriculture-oriented jobs. This employment figure is based on the estimated 809,800 square feet (75,200 sm) of building area to be utilized and employment density ratios. If this typical example provides for institutional development such as McLennan Community College, there would be approximately 190 on-staff personnel, including approximately 76

full-time teaching positions and approximately 114 support positions (McLennan Community College, 1996).

Reuse Scenario III - Low Intensity

Approximately 58 jobs could be created as a result of the typical commercial agriculture example identified. This employment figure is based on the estimated 127,440 square footage (11,840 sm) to be utilized and the number of estimated employees per 13,000 square feet (1,210 sm) of building area and one employee per 200 acres (81 ha) for the 9,685 acres (3,920 ha) used for agriculture. This type of alternative would provide the fewest jobs and create the least amount of indirect employment opportunities in the businesses which service and support agricultural or similar low intensity-type activities. Unemployment may rise slightly in the county as a result of fewer job opportunities under this type of reuse.

4.2.3.5 Income

Reuse Scenario I - High Intensity

Implementation of the typical mixed use example identified could provide for a variety of employment opportunities commanding various salary ranges. Typical wage rates for the various jobs were discussed in Section 3.3.5. It is expected that positions created under this alternative would be included within these wage rates. Assuming these positions and the respective hourly wages under this typical example, income could be lower than the average wages of \$13.52 per hour at NWIRP McGregor during Hercules Inc./Alliant Techsystems operation. The impact of this typical example would be an overall lower median income for workers in McGregor.

Reuse Scenario II - Medium Intensity

Implementation of the typical community college/R&D example identified could provide an alternative for jobs which would be reflective of the City's wage average of \$10.50 per hour. Teaching positions at a community college and for the R&D facility could average \$34,000 a year, with support staff averaging \$18,000 per year (McLennan Community College, 1996). The impact of this typical example would be lower average wage rates than that of the former Hercules Inc./Alliant Techsystems employees at NWIRP McGregor of \$38,000 per year.

Reuse Scenario III - Low Intensity

Implementation of the typical commercial agriculture example identified would provide jobs which are agricultural-related. The average agriculture-related job in Texas has a low wage rate of \$4.25 per hour, a high wage rate of \$10.00 per hour, with an average wage rate of \$5.06 per hour (Texas Workforce Commission, 1996). Low intensity land use could also provide

jobs related to storage and warehousing activities. These positions would most likely pay the minimum wage of \$4.25 per hour. These wage rates would provide an average per capita income lower than that associated with Hercules Inc./Alliant Techsystems at NWIRP McGregor.

4.2.3.6 Housing

Reuse Scenario I - High Intensity

Under the typical mixed use example identified, an additional 279 persons could require housing in the McGregor community. This is based on the potential number of jobs (1,267) which could be created under this scenario and the employee residence distribution when NWIRP McGregor was in operation. As of November, 1996, there were approximately 10 single family houses for sale and no houses for rent in McGregor (Pascal, 1996). Implementation of the typical mixed use example identified could result in more housing demand because of the increase in employment opportunities. New families moving into the McGregor area would create the demand for new or different housing types. Land for new subdivisions is available in the McGregor area for development. A positive indirect impact of this type of reuse would be construction opportunities for builders in the McGregor area.

Reuse Scenario II - Medium Intensity

Under the typical community college/R&D example identified, an additional 129 persons could require housing in the McGregor community. This is based on the potential number of jobs/students (585) which could be created under this type alternative and the employee residence distribution when Hercules Inc./Alliant Techsystems was in operation. As of November, 1996, there were approximately 10 single family houses for sale and no houses for rent in McGregor (Pascal, 1996). Implementation of the typical example identified could result in more housing demand because of the increase in employment opportunities. New families moving into the McGregor area would create the demand for new or different housing types. Land for new subdivisions is available in the McGregor area for development. A positive indirect impact of this type of reuse would be construction opportunities for builders in the McGregor area.

Reuse Scenario III - Low Intensity

Implementation of the typical commercial agriculture example identified could potentially result in families moving elsewhere to seek employment because the loss of job possible opportunities created by the implementation of this reuse scenario. This situation could result in an over-supply of housing for sale.

4.2.3.7 Education

Reuse Scenario I - High Intensity

Under the typical mixed use example identified, there is potential for approximately 279 adult persons moving into the McGregor area. Average family size is expected to be three persons per family. If it is assumed that one person per family is a child, and the 279 adult persons potentially moving into the community have families with one school-aged child, there could be as many as 279 children entering McGregor ISD. The capacity of the ISD is able to handle an additional 100 high school students; 150 junior high school students; and, 100 elementary school students (McGregor ISD, 1996). There would be no impact on the capacity of the McGregor school system if the new children were evenly distributed to accommodate the capacity load.

Reuse Scenario II - Medium Intensity

Under the typical community college/R&D example identified, it is assumed that approximately 63 persons with families could move into the McGregor area. The remainder of the 129 persons moving into the McGregor area is assumed to be students without families. Average family size is expected to be three persons per family. If it is assumed that one person per family is a child, and the 63 adult persons potentially moving into the community have families with one school-aged child, there could be as many as 63 children entering McGregor ISD. The capacity of the ISD is able to handle an additional 100 high school students; 150 junior high school students; and, 100 elementary school students (McGregor ISD, 1996). There would be no impact on the capacity of the McGregor school system.

Reuse Scenario III - Low Intensity

Implementation of the typical commercial agriculture example identified would result in fewer job opportunities. The potential exists that families with school-aged children would relocate outside the community in search of better job opportunities. The impact of this type of reuse could result in downsizing of the McGregor ISD. The student enrollment for the 1997-1998 school year is 1,141, a 51 student reduction from 1995 conditions. Thus, impacts to over-all student enrollment are anticipated to be minimal for this reuse scenario.

4.2.3.8 Municipal Services

Reuse Scenario I - High Intensity

Implementation of the typical mixed use example identified could place additional demands on municipal services and facilities. Utilities' capacity can accommodate the expected increase in population. The basic governmental structure would not change. More medical, public

recreational facilities, and fire and police services may be necessary if more persons move into the McGregor area as a result of job opportunities. It is estimated that one additional law enforcement person and three more volunteer fire personnel would be needed to maintain the current population/service ratios.

Reuse Scenario II - Medium Intensity

Implementation of the typical community college/R&D example identified could place demands on municipal services and facilities similar to the high intensity land use scenario discussed above. If more persons move into the McGregor area as a result of job opportunities, more medical, public recreational facilities, and fire and police services may be necessary. It is estimated that one additional law enforcement person and three more volunteer fire personnel would be needed to maintain the current population/service ratios.

Reuse Scenario III - Low Intensity

Implementation of the typical commercial agriculture example identified would not require much demand on municipal services and facilities due to the lack of labor-intensive nature of agriculture or storage and warehousing. This type of reuse would most likely alleviate the need for some positions within the police and fire departments as well as other municipal services.

4.2.3.9 Transportation

Reuse Scenario I - High Intensity

Implementation of the typical mixed use example identified would generate approximately 646 vehicles traveling to the NWIRP McGregor facility. This is based on the approximate 1,267 jobs which would be created under this alternative. The vehicular traffic associated with this typical example would not impact the level of service of the adjacent roadways. The area roadways would remain at LOS A.

Reuse Scenario II - Medium Intensity

Implementation of the typical community college/R&D example identified could expect as many as 585 employees traveling to work at NWIRP McGregor. This typical example would contribute an additional 300 vehicles to the roadways. The vehicular traffic associated with this typical example would not impact the level of service of the adjacent roadways. The area roadways would remain at LOS A.

Reuse Scenario III - Low Intensity

Assuming a worst case peak hour trip rate of one trip per employee, implementation of the typical commercial agriculture example identified would yield 58 vehicles during peak hour traffic. This typical example would not impact the level of service of the adjacent roadways.

4.3 CUMULATIVE IMPACTS

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments which would result from the combination of construction, operation and associated impacts resulting from the proposed action, either retention or disposal, when added to other past, present, and reasonably foreseeable actions. Past projects, or those implemented or built before 1996, can be considered to be part of the pre-closure conditions environmental baseline already presented in this EA. Included within the concept of past projects are all maintenance activities, land development projects, and other actions that occurred before detailed analysis began on this EA. Other major redevelopment projects are not on-going in the area.

Implementation of either the No Action or Disposal alternatives would result in minimal direct impacts to either the biological or physical resources of the region as documented through-out this section. While placing the facility into long-term caretaker status (No Action) would result in only minimal impacts to biological and physical resources, it would result in the loss of what could be a valuable community resource for redevelopment and result in potential loss of economic opportunities to the local community. Placing the property into caretaker status as part of the No-Action alternative would not be an enhancement to the growth of the local area. Impacts would consist of a potential decrease in population, loss of economic activity for the area, and possible reduced employment from pre-closure conditions. Selection of the Disposal alternative (the proposed alternative) would allow the local community to potentially realize these opportunities. The potential reuse of NWIRP McGregor facilities and land under any of the typical reuse scenarios would provide added enhancement to the potential future growth of the City of McGregor and McLennan County.

McGregor is currently located in an area dominated by agricultural activity. However, it is located within easy access of major markets in Dallas-Fort Worth, Austin-San Antonio, Fort Hood, Waco and College Station. Thus, there could be a slow shift of the City's agricultural based economy to an economy based on retail, wholesale trade services, and manufacturing if the City's preferred reuse scenario (high intensity reuse) is implemented as part of possible disposal of the facility. It is anticipated that any reuse of NWIRP McGregor would compliment the potential growth of the area. It is also expected that the impact of the North American Free Trade Agreement (NAFTA) could encourage business development in the region which could present a possible \$558 million increase in the economy by the year 2003 (TEEX, 1995). The NWIRP McGregor facility would be a prime candidate for any development which would

support this potential economic growth. Impacts in the area of McGregor are anticipated to be consistent with those discussed through-out the Socioeconomic Resources section of this EA. The typical mixed use example can provide the optimum employment and economic activity opportunities to the area, followed by the typical community college/R&D example. Long-term negative impacts to the area should be minimal and would be controlled by existing Federal, state and local regulations depending on the specific development anticipated.

4.4 COMPLIANCE WITH VARIOUS LAND USE POLICIES AND CONTROLS

4.4.1 General

This EA has been prepared in accordance with the following regulations:

- The Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Regulations (40 CFR 1500).
- OPNAVINST 5090.1B, which implements, within the Department of the Navy, the requirements set forth by NEPA.

A summary of the some of the various laws and coordination requirements and the extent to which the proposed action at NWIRP McGregor complies or conflicts with each of these laws and requirements are presented in this section.

4.4.2 National Environmental Policy Act

NEPA directs that "to the fullest extent possible . . . all agencies of the Federal government shall . . . insure that presently undetermined environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations . . ." This EA has been prepared in order to comply with the provision of NEPA. This EA provides an adequate assessment of impacts associated with the proposed disposal or retention of NWIRP McGregor.

4.4.3 Clean Water Act

The Clean Water Act, as amended, regulates discharges to the waters of the United States. Compliance with applicable provisions of the Clean Water Act would be accomplished by coordination with the appropriate resource agencies, submittal of permit applications, if required, and response to agency review. Section 404 of the Act regulates the discharge of dredged or fill material. The acquiring entity would have to coordinate with the USACE if potential dredged or fill activities are identified as part of any of the reuse scenarios developed. Any point sources of pollution associated with the proposed reuse scenarios would have to comply with NPDES permit requirements. The Clean Water Act includes stormwater

discharges associated with industrial activity and those discharges originating from large and medium municipal separate storm sewer systems. No changes have been proposed at NWIRP McGregor that would effect surface water or drainage systems. Releases of stormwater runoff to area streams would adhere to state and local water quality requirements and permit conditions. The No Action alternative would minimize releases to area streams.

4.4.4 Clean Air Act

The Clean Air Act (CAA), as amended, provides for protection and enhancement of the nation's air resources. Localized impact on air quality may be experienced during construction or equipment operation. However, specific impacts are unknown at this time. Any air emission sources would be permitted and remain within state and local air quality maintain requirements. The EPA has published final rules on general conformity (40 CFR Part 51 in *Federal Register*, November 30, 1993) that apply to Federal actions in areas designated nonattainment for any of the criteria pollutants under the CAA. The rules do not apply to this action since the area is in attainment for all criteria pollutants.

4.4.5 Fish and Wildlife Coordination Act

Section 10 of the Fish and Wildlife Coordination Act (16 United States Code [USC] 661-666) directs Federal agencies to consult with USFWS, National Marine Fisheries Services (NMFS), and state agencies before authorizing alterations to water bodies. The purpose of this Act is to ensure that wildlife conservation receives equal consideration, and that it be coordinated with other features of water resource programs. No alterations to water bodies are anticipated to occur as part of the proposed disposal or retention of NWIRP McGregor.

4.4.6 Endangered Species Act

The Endangered Species Act requires that any action authorized by a Federal agency is not likely to jeopardize the continued existence of an endangered or threatened species or results in the destruction or adverse modification of habitat of such species which is determined to be critical. Section 7 of the Endangered Species Act of 1973, as amended, requires the responsible Federal agency to consult with USFWS and NMFS concerning endangered and threatened species under their jurisdiction. Preliminary coordination with the USFWS (see Section 3.2.3) resulted in the identification of listed species that could occur within McLennan and Coryell Counties, but not necessarily at or in the immediate vicinity of the NWIRP McGregor facility. The USFWS's Wildlife Management Plan for NWIRP McGregor indicates that no threatened or endangered species occurred at the facility during the time of the plant development. Additionally, coordination with the USFWS-Austin field office revealed that there are no presently known occurrences of threatened or endangered species at the facility. The TPWD also indicated that there are no known occurrences of special species or natural communities in the immediate vicinity of the site. This EA has been prepared to comply with the Section 7

requirements and concludes that the proposed action does not constitute a "may affect" situation for any endangered or threatened species. No further coordination is required.

4.4.7 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC § 703 *et seq.*) protects game, nongame, and insectivorous birds which migrate with the changing seasons. This protection covers the bird, the bird's nests, and their eggs from hunting, killing, possession, selling, or buying unless otherwise permitted by regulations. The Federal government is exempt from the Migratory Bird Treaty Act. Thus, compliance with this act does not apply for the proposed disposal or retention of the site by the Navy. However, for implementation of any of the reuse scenarios, the new owner(s)/tenant(s) may need to comply with the Act dependent upon the activities associated with the specific reuse and a determination of compliance by the USFWS may be required.

4.4.8 National Historic Preservation Act

In compliance with applicable Federal laws, regulations, and procedures regarding historic preservation, potential impacts to cultural resources have been evaluated at NWIRP McGregor. Sections 4.1.1.7 and 4.2.1.7 discuss the results of the archaeological and historic resources surveys. The Navy will incorporate protective covenants for both historic and archeological resources into a MOA which will be completed prior to any permanent transfer of the property.

4.4.9 Zoning Restrictions and Requirements

The proposed Disposal alternative would not conflict with local zoning restrictions and requirements. Upon transfer of the property to civilian use, zoning for the lands would be re-evaluated. Implementation of the medium intensity reuse scenario could in the future allow for a portion of NWIRP McGregor to be zoned for urban development. With establishment of proper buffer areas along the perimeter of adjacent industrial areas, the potential reuse scenarios would not conflict with any known local zoning requirements in the surrounding region.

4.4.10 Local Land Use Plans

The proposed Disposal alternative would not conflict with local land-use plans of the surrounding region. The No Action alternative would result in the greatest change to land use since the industrial portions of the property would remain inactive for an indefinite period of time. The reuse scenarios analyzed by this EA have been developed to include a combination of industrial, commercial and agricultural reuses of NWIRP McGregor. The reuse scenarios do not conflict with local land-use plans of the surrounding region. After the property is transferred, it would be the responsibility of the City of McGregor to comply with local land use planning and ordinances

4.4.11 Floodplains

Executive Order 11988 - Flood Plain Management requires that Federal agencies avoid activities which directly or indirectly result in development of flood plain areas. No impacts to area floodplains are anticipated since construction would not occur within floodplains.

4.4.12 Wetlands

Executive Order 11990 - Protection of Wetlands directs agencies to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands on Federal property. No areas identified as wetlands would be impacted by the proposed Disposal alternative or reuse scenarios.

4.4.13 Prime and Unique Farmlands

The purpose of the Farmland Protection Policy Act is to minimize the extent to which Federal programs contribute to the necessary and irreversible conversion of farmland to non-agricultural uses. No prime or unique farmlands would be removed from agricultural use by the proposed action.

4.4.14 Coastal Zone Management

The State of Texas has recently approved a Coastal Zone Management (CZM) program. However, NWIRP McGregor is not located within the jurisdiction of the CZM program; therefore, this law does not apply to this action.

4.4.15 Wild and Scenic Rivers

Wild and scenic rivers are defined as selected rivers of the U.S. which, with their immediate environments, possess outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar value, which shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. No rivers of significant wild, scenic, or recreational qualities occur at NWIRP McGregor.

4.4.16 Pollution Prevention Act of 1990

The Pollution Prevention Act of 1990 establishes a national policy of pollution control including pollution prevention and reduction at the source; environmentally safe recycling or treatment; and disposal or release of pollutants as a last resort. Any proposed action associated

with the Disposal alternative and reuse scenarios implemented would be subject to applicable provisions of this law.

4.4.17 Resource Conservation and Recovery Act (RCRA)

The proposed activity would comply with RCRA policies regarding solid waste recycling and reclamation, and hazardous waste generation, transportation, treatment, storage, disposal, and recycling. Generators or transporters (off-site transport) of hazardous waste would require an EPA manifest identification number (40 CFR 262.10 - generation; 40 CFR 263, Subpart B - transporters).

Site investigations and remedial action would continue at NWIRP McGregor until the property is remediated and corrective action is complete (U.S. Navy, 1996c). The formal RCRA closure procedure for the RCRA permitted units at NWIRP McGregor, including the development and implementation of a RCRA Closure Plan, is required for each permitted storage, treatment or disposal unit. Closure and remediation of the RCRA-regulated units would be conducted under RCRA prior to any permanent property transfer.

4.4.18 Community Environmental Response Facilitation Act (CERFA)

The proposed actions associated with possible disposal would comply with CERFA, Public Law 102-46 enacted October 19, 1992. CERFA amends section 120(h)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This law requires a transferring agency to provide a covenant, when transferring a parcel identified as contaminated that any response action or corrective action "found to be necessary" would be undertaken by the United States. The deed for such parcels must also provide a right of access to perform any additional response action which would include investigations, as appropriate.

Although closure and remediation of the RCRA-regulated units would be conducted under RCRA, the CERCLA process, through the Navy's IRP, would proceed concurrently to address non-RCRA sites (identified by the EBS process). In the state of Texas, property identified and receiving closure concurrence of the TNRCC is transferable under the 120(h)(4) process. Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process.

4.4.19 Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act was enacted to "regulate commerce and protect human health and the environment by requiring testing and necessary use restrictions on certain chemical substances". Unlike many of the existing environmental laws, TSCA regulates not

only the end products of manufacturing or processing activities, but also provides for regulation the manufacture of substances not yet developed, the permitted use of these chemicals, and the allowed manufacturing quantities. The Act requires manufacturers to test substance(s), to submit reports and to maintain records on their health and environmental effects. Substances regulated under TSCA include PCBs and asbestos. For purposes of the proposed action, chemicals or substances that may be manufactured or used at NWIRP McGregor after disposal would be subject to TSCA compliance.

4.4.20 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was signed on February 11, 1994. It directs all Federal departments and agencies to incorporate environmental justice in achieving their mission. Each Federal department and agency would accomplish this by conducting programs, policies, and activities that substantially affect human health or the environment in a manner that does not exclude communities from participation in, deny communities the benefits of, or subject communities to discrimination under such actions, because of their race, color, or national origin.

Additionally, Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, mandates that Federal agencies identify and assess environmental health and safety risks that may disproportionately affect children as a result of the implementation of Federal policies, programs, activities, and standards. Children can be disproportionately affected by environmental health and safety risks since their neurological, immunological, digestive, and other bodily systems are still developing; they eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; their size and weight may diminish their protection from standard safety features; and their behavior patterns may make them more susceptible to accidents (62 Federal Register 19883-19888).

The purpose of this EA is to address potential environmental, social, and economic impacts associated with the disposal or retention of Navy-owned properties at NWIRP McGregor. The proposed action does not discriminate against minority or low-income individuals and children when determining environmental impacts or during the preparation of NEPA documentation. The scoping meeting conducted as part of the NEPA process helps to ensure the public, including minority communities and low-income communities, have adequate access to public information relating to human health or environmental planning, regulation, and enforcement.

As evaluated in accordance with Executive Orders 12898 and 13045, the direct and indirect effects of the proposed action are not expected to cause adverse environmental or economic impacts specific to any group or individual from minority or low-income populations and children residing in the study area. In addition, no persons or individuals included as minority

or low-income populations will be displaced as a result of the proposed disposal and possible reuse of NWIRP McGregor.

4.5 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Energy requirements for the proposed action would have little impact on energy requirements for the nation or the cities of McGregor or Waco. Energy, in the form of electricity and various fossil fuels, would be required during construction, operation, and maintenance activities associated with the implementation of any of the reuse examples, with the exception of the No Action alternative. Selection of the No Action alternative would result in a decrease in energy requirements and increase in conservation potential due to the inactive status of the property.

4.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Any demolition, construction, or renovations associated with disposal and possible reuse of the Navy property would require the commitment of labor, capital, energy, biological resources, building material, and land resources.

Short-term commitments include labor, capital, and fossil fuels that result directly from construction activities and indirectly from the provision of services to the proposed site during any construction. Long-term commitments of resources would result directly from operation and maintenance of the facilities and from the provision of water, sewage, electricity, and solid waste services to the houses and associated new occupants during use. New buildings or materials used at NWIRP McGregor represent long term commitment of resources.

Duration of the commitment of land resources would depend on the ultimate reuse and life of the facilities and property. Since the preferred use of the land would result in possible high intensity usage, the commitment of land resources is long-term.

4.7 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Possible reuse of NWIRP McGregor as a result of selection of the Disposal alternative would provide economic benefit in the form of employment and income to the area. Selection of the No Action alternative would provide possible long-term negative impacts on the local economy and productivity of the region.

4.8 URBAN QUALITY, HISTORIC AND CULTURAL RESOURCES AND DESIGN OF THE BUILT ENVIRONMENT, INCLUDING THE REUSE AND CONSERVATION POTENTIAL OF VARIOUS ALTERNATIVES AND MITIGATION MEASURES

Selection of any of the reuse intensities are anticipated to maintain the industrial quality and design of the built environment. The developed environment at NWIRP McGregor would remain and potentially be increased through future development. All potentially historic structures or buildings on Navy-owned property would be managed in accordance with Section 106 of the National Historic Preservation Act. The No Action alternative would result in the greatest amount of conservation potential.

4.9 MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

Site investigations and remedial action would continue at NWIRP McGregor for any of the alternatives/reuse scenarios considered until the property is remediated and corrective action is complete. This would consist of the formal RCRA closure procedure for the RCRA permitted units and the CERCLA process to address non-RCRA sites identified by the EBS process. In the state of Texas, property identified and receiving closure concurrence of the Texas Natural Resource Conservation Commission (TNRCC) is transferable under the CERCLA 120(h)(4) process. Prior to property transfer, required covenants would be developed to warrant that necessary remedial action has been taken or will be taken and that remediation will be performed by the Navy. The Navy will adhere to this requirement when implementing the transfer of NWIRP McGregor under the 120(h)(4) process. The timing of the remediation effort is dependent on the extent of the remediation efforts required and available funding. The Navy would coordinate with the future owner and/or operator of the installation and would perform all required remediation prior to facility transfer and reuse.

Because the action of disposal would result in the transfer of potential eligible historic properties to other entities, HABS Level III documentation for each property type has been completed and submitted to the SHPO. This documentation mitigates for the possible impacts from potential alternations to or demolition of eligible properties that could result as part of the potential reuse scenarios. The HABS Level III documentation has been accepted by the SHPO as completion of the Section 106 process. Also, the Navy will incorporate protective covenants for both historic and archeological resources into a MOA which will be completed prior to any permanent transfer of the property at NWIRP McGregor.

Absent statutory authority, Navy cannot impose other restrictions on the future use of this surplus Federal property. Navy would, however, include appropriate notifications in the deeds for any parcels which require protection under appropriate Federal and state laws (100 year floodplains, wetlands, wildlife management areas, etc.). The EA addresses the actions that would be necessary to mitigate the impacts associated with reuse and redevelopment of the

NWIRP McGregor property. If necessary, the acquiring entity, under the direction of Federal, state, and local agencies with regulatory authority over protected resources, would be responsible for implementing necessary mitigation measures if impacts are projected to occur. Environmental impacts from any of the reuse scenarios considered would be limited to those associated with the operation of the new tenants. No major new development is anticipated under any of the reuse scenarios; existing facilities and structures would be used in a manner consistent with present use. New owner/tenants may need to obtain permits and adhere to all applicable Federal, state, and local laws and regulations.

4.10 ADVERSE ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSED ACTION BE IMPLEMENTED

4.10.1 Physical Resources

Exposure of surface soils during any construction or utility maintenance would cause some erosion, although this effect can be minimized by the development and implementation of stormwater pollution prevention plans.

Any construction activities occurring as part of any of the reuse scenarios can increase fugitive dust emissions in the immediate construction zone for a short term adverse impact.

Short-term increases in suspended sediment loading due to soil erosion during construction may occur which can impact water quality in nearby streams.

Groundwater withdrawals for industrial purposes can result in continued aquifer drawdown and potentially loss in aquifer storage capacity. This loss would be partially offset by large-scale conservation measures implemented in north-central Texas.

4.10.2 Biological Resources

Some terrestrial wildlife species may be injured or killed during facility conversion activities and infrastructure improvements.

4.10.3 Socioeconomic Resources

Transfer of Hercules, Inc./Alliant Techsystems' operations has resulted in a loss of jobs and income to the local economy. Reuse of the NWIRP McGregor facility would possibly offset those job and income losses experienced.

Long-term commitments of resources would result directly from operation and maintenance of NWIRP McGregor and indirectly from provision of water, sewage, electricity, gas, and solid waste service to the facilities. Building materials also would be long-term commitments.

Sale of facilities and property by the Federal government to the public and private sector that would preclude future use of the property by the Federal government.

NWIRP McGregor existing land use would not change since the proposed action includes industrial, commercial, and/or agricultural activities which would continue. Reuse of the facility would provide long-term economic benefit to the community, if successfully implemented.

Any of the reuse scenarios would positively benefit the cities of McGregor and Waco in terms of economic activity, employment, and income. Community services such as schools, police, fire, and emergency medical services would not be adversely impacted by any reuse alternative.

The No Action Alternative would result in all the facilities at NWIRP McGregor being placed in caretaker status. There would be a loss of potential economic resources to the City of McGregor and surrounding communities if No Action is selected.

5.0 COORDINATION

5.1 AGENCY COORDINATION

Federal, state, and local government and agencies were consulted prior to and during the preparation of this DEA. Agencies were initially notified of the project with a copy of the Notice of Intent to prepare this document, which was mailed to individual agencies, and published in the Federal Register, local, and regional papers. Some agencies were contacted by telephone or visited during the course of the study. The agencies contacted are listed below.

5.1.1 Federal and Government and Agencies

The following individuals or agencies representing the Federal government were contacted during the preparation of this document.

- Senator Kay Bailey Hutchison
- Senator Phil Gramm
- U.S. House of Representative Chet Edwards
- Environmental Protection Agency, Region VI, Dallas, TX (Vallette)
- U.S. Dept. of Commerce, NOAA, Ecology & Conservation Office
- U.S. Dept. of Defense, Office of Economic Adjustment, Washington, DC (Gorman)
- U.S. Dept. of Defense, Army Corps of Engineers, Ft. Worth, TX
- U.S. Dept. of Defense, DCMO Waco
- U.S. Dept. of Defense, National Guard, Waco, TX
- U.S. Dept. of Defense, Naval Reserve Training Center, Waco, TX
- U.S. Dept. of Defense, Army Reserve Training Center, Waco, TX
- U.S. Dept. of Defence, Marine Corps Reserve Ordnance Maintenance Company, Waco, TX
- U.S. Dept. of Housing & Urban Development, Washington (Smith)
- U.S. Dept. of the Interior, Bureau of Indian Affairs, Anadarko, OK (Collier, Maytubby, Sanders)
- U.S. Dept. of the Interior, Fish & Wildlife Service, Arlington, TX
- U.S. Dept. of the Interior, Office of Environmental Policy & Compliance
- U.S. Dept. of Transportation, Federal Aviation Administration, Ft. Worth, TX (Nicely)

5.1.2. State Government and Agencies

The following individuals or agencies representing the Texas' government were contacted during the preparation of this document.

- George W. Bush
- David Sibley, District 22 (McLennan County)
- Bill Sims, District 24 (Coryell County)
- Kip Averitt, District 56 (McLennan County)
- Barbara Rusling, District 57 (McLennan County)
- Allen Place, District 59 (Coryell County)
- Governor's Office of State/Federal Relations, State Point of Contact
- Texas Attorney General's Office, Environmental Protection Division
- Texas Department of Criminal Justice
- Texas General Land Office
- Texas Historical Commission
- Texas Natural Resource Conservation Commission
- Texas Parks and Wildlife Department

5.1.3 Local Government and Agencies

McLennan County

Jim Lewis - County Judge
 Wayne Davis - Commissioner, Precinct #1
 Lester Gibson - Commissioner, Precinct #2
 Fred Binner - Commissioner, Precinct #3
 Ray Meadows - Commissioner, Precinct #4

Coryell County

John Hull - County Judge
 John W. Carlton, Commissioner, Precinct #1
 Don Thompson, Commissioner, Precinct #2
 Hiram Davidson, Commissioner, Precinct #3
 Kyle Pruitt, Commissioner, Precinct #4

City of McGregor

Felix A. Morris, Mayor
 Frank Leos, Mayor Protem
 Gus Wiethorn, Jr., Councilmember
 Nicholas Brown, Councilmember
 Nelda Robinson, Councilmember
 Jim Logan, Council member
 Bill Dake, City Manager

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Gene McBride, Mayor

City of Crawford

Neal Plemons, Mayor

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Bob Stevens, City Manager

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Pike Anderson, Mayor
Dennis Woodard, City Manager

City of Lorena

William E. Boyd, Mayor

City of Moody

Mike Alton, Mayor
Charleen Dowell, City Manager

City of Oglesby

Kenneth Goodwin, Mayor

City of Waco

J. Robert Sheehy, Sr., Mayor
Jim Holgersson, City Manager

5.2 PUBLIC COORDINATION

5.2.1 Opportunity for Public Comments

Throughout preparation of this EA, an effort has been made to locate, inform, and seek input from interested individuals and organized groups. This effort included the issuance of public

notices and a scoping meeting. Individuals who submitted correspondence or who requested to be added to the mailing list will be sent copies of all future public notices. Copies of the EA will be available for public review at central locations. Members of the public will have an opportunity to comment on the EA after its distribution.

5.2.2 Scoping Meeting

A public scoping meeting was held on March 26, 1996 at 7:00 p.m. at the McGregor High School Auditorium. Notification of the meeting was published in the Federal Register on March 7, 1996, the Waco Tribune Herald on March 13, 1996, and the McGregor Mirror on March 14, 1996. Press releases were sent to local newspapers, radio stations and television stations. Individual notices were mailed to elected officials, government agencies, local organizations, civic groups, businesses, and interested citizens.

Navy Presentation

A presentation by the Navy explained the disposal process and proposed action. Also presented at the meeting were the proposed reasonable alternatives to be examined and the potential environmental impact of these alternatives. The public was invited to comment on issues they wished examined and/or discussed in the document. Four speakers commented at the meeting.

Robert Esenwein, Turner Collie & Braden's Project Director, narrated a slide presentation covering the following topics:

- NWIRP McGregor background information
- Facility description
- Disposal process and alternatives
- Reuse alternatives
- Purpose of the scoping process
- Importance of public input
- NEPA process
- Impacts associated with disposal and reuse
- NEPA review process



TEXAS DEPARTMENT OF CRIMINAL JUSTICE

P.O. Box 99 • Huntsville, Texas 77342-0099

Wayne Scott
Executive Director

May 15, 1996

Rhonda Boyer
Turner Collie & Braden Inc.
P.O. Box 130089
Houston, Texas 77219

Dear Ms. Boyer:

The Texas Department of Criminal Justice (TDCJ) currently has been authorized by the Texas Legislature to construct 8,000+ beds. Currently sites have been identified at nine of our existing units to construct a high security facility at each of these locations. Planning estimates indicated that these high security facilities will provide between 8,000 to 12,000 additional beds to TDCJ.

The Texas Legislature has not authorized or appropriated funds to TDCJ beyond our current construction of the high security facilities. After this construction is completed the projection for correctional populations developed by the Criminal Justice Policy Council indicates we should have sufficient capacity through July of 1998. However, these projections also indicate a shortfall or duty to accept of 9,891 by August 2000. Future Legislative sessions will have to determine how these future projected needs will be met.

We appreciate your interest in the Texas Department of Criminal Justice. Please feel free to contact us if we can be of further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Wayne Scott".

Wayne Scott
Executive Director
Texas Department of Criminal Justice

WS/lis

turner01.ltr



**TEXAS
PARKS AND WILDLIFE DEPARTMENT**
4200 Smith School Road • Austin, Texas 78744 • 512-389-4800

ANDREW SANSOM
Executive Director

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Ft. Worth

May 28, 1996

Daniel J. Murphy
Turner, Collie & Braden, Inc.
5710 LBJ Freeway, Suite 370
Dallas, Texas 75240

RECEIVED

MAY 31 1996

TURNER COLLIE & BRADEN

Dear Mr. Murphy:

Thank you for contacting us regarding your April 11, 1996 request for information on sensitive species and natural communities within or near the proposed disposition of the Naval Weapons Industrial Reserve Plant at McGregor, Texas. A search of the Texas Biological and Conservation Data System (BCD) revealed no presently known occurrences of special species or natural communities in the immediate vicinity of the proposed project. However, following are descriptions for species that may occur if appropriate habitat is available. For further reference, please find enclosed a list of presently computerized records, an incomplete list of vertebrates, and a list of state endangered and threatened species that possibly occur in Coryell and McLennan counties.

State Threatened--

Phrynosoma cornutum (Texas Horned Lizard) G5 S4 - open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September

Other Special Species--

Athene cunicularia hypugaea (Western Burrowing Owl) G4TU S3B - open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows

Spilogale putorius interrupta (Plains Spotted Skunk) G4T3T4 S3 - catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie

Thamnophis sirtalis annectens (Texas Garter Snake) G5T3 S3 - wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August

Natural Communities--

Little Bluestem-Indiangrass Series G2 S2 - broadly defined upland tallgrass grassland that once occurred throughout the Blackland, Fayette, and Grand prairies, but is now restricted to small, isolated relict



Daniel J. Murphy

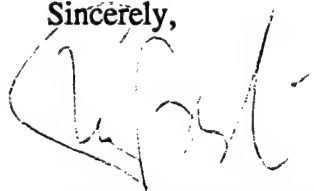
Page 2

The BCD information included here is based on the best data currently available to the state regarding threatened, endangered, or otherwise sensitive species. However, these data do not provide a definite statement as to the presence or absence of special species or natural communities within your project area, nor can these data substitute for an on-site evaluation by qualified biologists. This information is intended to assist you in avoiding harm to species that occur on your site.

This letter does not constitute a review of fish and wildlife impacts that might result from the activity for which this information is provided. Should you need an impact review of this type from the Texas Parks and Wildlife Department, contact the Terrestrial Assessment Branch of the Wildlife Division, attention Roy Frye (4200 Smith School Road, Austin, Texas 78744 ph. 512/389-4579).

Please contact one of the Texas Parks and Wildlife Department's BCD Information Managers before publishing printout data or otherwise disseminating any specific locality information. Thank you again for contacting us. Please feel free to call me at 512/912-7011 if you have any questions.

Sincerely,



Shannon Breslin, Environmental Review Coordinator
Texas Biological and Conservation Data System

SLB:sb

Enclosures



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services Field Office
10711 Burnet Road, Suite 200
Hartland Bank Bldg.
Austin, Texas 78758

MAY 31 1996

JUN 05 1996

TURNER COLLIE & BRADEN

2-15-96-I-133

Daniel J. Murphy
Turner Collie & Braden, Inc.
5710 LBJ Freeway, Suite 370
Dallas, Texas 75240

RE: Environmental Impact Statement for Disposition of NWIRP, McGregor, Texas

Dear Mr. Murphy:

This responds to your letter, dated April 11, 1996, requesting a list of species federally listed or proposed to be listed as threatened or endangered. The proposed action involves the preparation of an Environmental Impact Statement for disposition of the Naval Weapons Industrial Reserve Plant (NWIRP) at McGregor, Texas. The facility encompasses approximately 9,700 acres with the majority of the site being located in McLennan County and a small portion of the western parcel in Coryell County.

The following species may be found in Coryell and McLennan Counties:

Coryell County

Black-capped vireo	(E)	<i>Vireo atricapillus</i>
Golden-cheeked warbler	(E)	<i>Dendroica chrysoparia</i>
Whooping crane	(E)	<i>Grus americana</i>
Loggerhead shrike	(SOC)	<i>Lanius ludovicianus</i>
Texas horned lizard	(SOC)	<i>Phrynosoma cornutum</i>
Guadalupe bass	(SOC)	<i>Micropterus treculi</i>
Bifurcated cave amphipod	(SOC)	<i>Stygobromus bifurcatus</i>
Leon River winter stonefly	(SOC)	<i>Taeniopteryx starki</i>
Glass Mountain coral-root	(SOC)	<i>Hexalectris nitida</i>
Texabama (Fort Hood) croton	(SOC)	<i>Croton alabamensis</i> var. <i>texensis</i>

McLennan County

Black-capped vireo	(E)	<i>Vireo atricapillus</i>
Golden-cheeked warbler	(E)	<i>Dendroica chrysoparia</i>
Bald eagle	(T)	<i>Haliaeetus leucocephalus</i>
Ferruginous hawk	(SOC)	<i>Buteo regalis</i>
White-faced ibis	(SOC)	<i>Plegadis chihi</i>
Texas olive sparrow	(SOC)	<i>Arremonops rativirgatus rutivirgatus</i>
Texas garter snake	(SOC)	<i>Thamnophis sirtalis annectans</i>

Daniel J. Murphy

2

Texas horned lizard
Smalleye shiner
Sharpnose shiner

(SOC)
(SOC)
(SOC)

Phrynosoma cornutum
Notropis buccula
Notropis oxyrhynchus

Endangered species (E) are species in danger of extinction throughout all or a significant portion of its range. Threatened species (T) are species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Species of Concern (SOC) are those for which the Service has information indicating that proposing to list is possibly appropriate, but for which substantial data on biological vulnerability or threats are not currently available to support the immediate preparation of such rules. SOC's have no legal protection under the Endangered Species Act and are included in this document for planning purposes only.

Wild and Scenic Rivers

The project site does not contain any designated Wild and Scenic Rivers along its route.

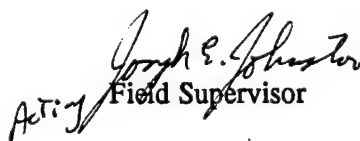
Wetlands

Several small wetlands occur throughout the base along with some seasonally flooded creeks such as Station Creek, Harris Creek, Willow Creek, and Sputh Creek. South Bosque River borders some of the boundary and may also occur on the property. Riparian zones and wetlands are primary habitat areas for wildlife and are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, or major construction. Riparian vegetation provides food and cover for wildlife, stabilizes banks and decreases soil erosion. Construction activities near such areas should be carefully designed and revegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. No permanent structures should be placed in the 100-year floodplain. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils. NWI maps may not identify all wetlands that are regulated by the Clean Water Act. Additional information regarding jurisdictional wetlands and waters of the U.S. that are regulated by the U.S. Army Corps of Engineers under the Clean Water Act can be obtained by contacting them at: Department of the Army, U.S. Army Engineer District, Forth Worth Corps of Engineers, P.O. Box 17300, Fort Worth, Texas, 76102-0300.

We suggest you contact the Texas Department of Parks and Wildlife for information concerning fish, wildlife, and plants of State concern.

If we can be of further assistance, please call Mary Orms at (512) 490-0063.

Sincerely,


Acting Field Supervisor



TEXAS
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Curtis Tunnell • Executive Director

The State Agency for Historic Preservation

June 24, 1996

Mr. Don Couch
Asst. Preservation Officer
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
P.O. Box 190010
Charleston SC 29419-9010

Re: Archeological sites at Naval Weapons Industrial Reserve Plant, McGregor, Texas
(NAVY, F2, F13, F16, F19)

Dear Mr. Couch:

Thank you for providing our office an opportunity to comment on the archeological sites referenced in the document entitled "Survey of Cultural Resources and Eligibility Assessment for Listing on the National Register of Historic Places at Naval Weapons Industrial Reserve Plant [NWIRP] McGregor, Texas."

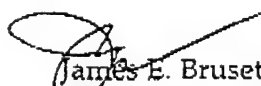
In an effort to assist the Navy meet its Section 106 and Section 110 responsibilities under the National Historic Preservation Act (NHPA), and ultimately to assist the City of McGregor in meeting its responsibilities under the Antiquities Code of Texas once the land transfer is complete, we offer the following recommendations. The Navy and the City of McGregor can agree to transfer the NWIRP property with a protective covenant that includes adequate conditions and ensures preservation of the property's significant historic features [36CFR800.9(c)(3)]. This wording can be incorporated into the Memorandum of Agreement currently being discussed for the historic related structures for this project.

Please note that if adequate conditions can be included to the land transfer, the city can give prior notification to our office under the Antiquities Code of Texas and its Rules of Practice and Procedure (enclosed) on a case by case basis for any development plans within the NWIRP property at a later date. If this is not possible, the Navy should conduct a 100% pedestrian survey within the APE to thoroughly identify archeological site locations, and subsequent archeological testing may be warranted to determine site eligibility for inclusion in the National Register of Historic Places. Mitigation may also be needed for any National Register eligible sites that cannot be avoided and protected following the land transfer.

Mr. Don Couch
June 24, 1996
Page -2-

As per your request, we offer as an attachment a description of when an archeological reconnaissance survey is appropriate as opposed to a 100% pedestrian survey. Please indicate in writing which of our recommendations the Navy chooses to consider, or if the Navy has alternative recommendations for our review and comment. If you have any questions, please contact Sergio Iruegas of our staff at 512/463-5864.

Sincerely,



James E. Bruseth, Ph.D.
Deputy State Historic Preservation Officer



Timothy K. Perttula, Ph.D.
Associate Director for Antiquities Review

JB/TKP/SI
enclosures

**Archeological Reconnaissance Survey
vs.
100% Pedestrian Archeological Survey**

Archeological reconnaissance investigations are best employed to gain a general idea of the number and kind of archeological sites within a federal undertaking's Area of Potential Effects (APE). The Texas Historical Commission's Department of Antiquities Protection recommends these investigations rarely, and only when alternative routes (i.e., for roadways, pipelines, transmission lines, etc.) are being considered by lead federal agencies or project sponsors to assist them in their decision-making process when choosing a preferred route. One hundred percent pedestrian surveys include shovel testing (and possible backhoe trenching to depths commensurate with proposed project impacts), and result in a thorough identification of archeological sites within a project's APE. From this kind of survey, recommendations can be provided to the federal agency on the presence of historic properties, and on what kinds of additional investigations may be warranted to identify historic properties, and assess project effects.



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The State Agency for Historic Preservation

NATIONAL REGISTER DEPARTMENT

27 June 1996

Mr. Don Couch
Asst. Preservation Officer
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
Charleston, SC 29419-9010

Re: Naval Weapons Industrial Reserve Plant, McGregor, McLennan County (Navy, N2, N10)

Dear Mr. Couch:

The State Historic Preservation Office [SHPO] reviews federal undertakings under Section 106 of the National Historic Preservation Act, 36 CFR Part 800. The SHPO's National Register Department reviews properties to determine their historical significance. The Department of Antiquities Protection responded under separate cover in a letter dated June 24, 1996.

The National Register Department has had an opportunity to review the above referenced report and has made the following comments to the consultant:

- Attached is the edited draft report (please return the original edited draft to our office at your earliest convenience). Please incorporate these comments as appropriate. Especially consider rewriting passive sentences, they are often confusing and hide information, whereas active voice provides more detail and clarity.
- Ineligible properties were first weeded out if they did not retain integrity and then if they did not retain strong historical associations. However, it is not readily apparent on the survey cards as to why integrity and/or historical associations did not exist. Please adjust the survey documentation to include a clear indication as to why a property was or was not considered eligible. Also, the front of the survey section could use an introduction that explains the contents to a user that may not necessarily refer to the context or other portions of the documentation. The original survey section is enclosed.
- The context includes some information about the community of McGregor, mostly late 19th and mid 20th century documentation. It would be preferable to include at least a few more paragraphs that discuss the community's evolution prior to construction of the plant. Before construction, when was McGregor's agricultural peak—1920s? 1930s? or before?
- As we have previously discussed, the Associated Property Types section needs further elaboration, particularly the area that addresses application of Criterion Consideration G. We concluded that the nature of this plant suggests that it is best evaluated in a national context, which, of course, is unavailable at this time. However, given the information the report reveals, a great understanding of the plant's role during the Cold War period makes evident that the resources at this property are not exceptionally significant in a national context. Further elaboration should explain why the state and local contexts are not

Page 2
06/27/96

appropriately applied to these resources. If available, some comparative data may explain why other similar plants in Texas (Pantex, Lone Star, Red River) provide better example of exceptional significance. Please remove references that indicate a Cold War era property can not be significant because its "guts" (machinery and processes) are no longer extant.

- Finally, the Selected Property Assessments [SPA] needs some modification to address properties that were not included. For example, if a property is included in the SPA, be certain to list all properties that the particular example represents, e.g. 2308 is in the SPA, does this property type or function represent other similar properties like 2302? Same with high explosive magazines. Also, with so many propulsion systems labs, should one be in the SPA? Think about this—maybe the better answer is to provide additional explanation in the SPA introduction of how these representative properties were chosen.
- In general, we agree with the eligibility recommendations the report provides. However, we strongly urge the Navy to consider all properties in Area H as Contributing to a historic district. Currently, only about half of Area H is included in the district. Based on the documentation provided we are inclined to believe that integrity issues within the entire area are nominal given that the district's historical associations and overall configuration are most important. Each property may not retain integrity of design, materials, and workmanship, but after reviewing photographic documentation we maintain that the most important aspects of integrity for this district are location, setting, feeling and association, which all appear intact.

When we receive the revised report we will provide our final comments regarding eligibility.

For questions about this review contact Jamie Wise, National Register Department, 512/463-6006. Thank you for your interest in the cultural heritage of Texas, and for your compliance with this federal review process.

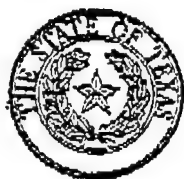
Sincerely,


James W. Steely, DSHPO
National Register Department

cc Ann Malanka, Hardy Heck Moore
Lisa Hart Stross, THC Department of Architecture
Sergio Iruegas, THC Department of Antiquities Protection

JWS/AED/JLW

LISA H.S.



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The State Agency for Historic Preservation

DIVISION OF ARCHITECTURE
and
NATIONAL REGISTER DIVISION

October 3, 1996

Don Couch, Code 064DC
Asst. Preservation Officer
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
P.O. Box 190010
Charleston, SC 29419-9010

Re: DOD, Naval Weapons Industrial Reserve Plant, McGregor, McLennan County, Texas (Fed Agency, D2, D33, N2, N20)

Dear Mr. Couch:

Thank you for the opportunity to review the project referenced above. The National Register Division reviews buildings, structures, objects, and districts for eligibility; the Division of Architecture reviews effects on eligible properties.

The National Register Division reviewed the Historic Resources Survey and Assessments for the McGregor Naval Weapons Industrial Reserve Plant and finds the historic context thorough and complete. In general, SHPO concurs with the findings of the report, however, several instances remain in which properties were determined ineligible due to compromised integrity or lack of significance. In the assessment of a military property such as this, the Criterion A significance may override the loss of physical integrity. The importance of minor buildings and facilities as part of the physical plant also should not go unrecognized. The following properties are therefore determined eligible under Criterion A:

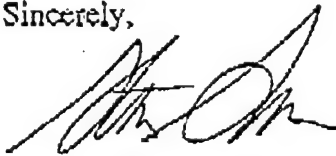
Building 106 - Administrative Office
Building 404 - Propulsion System Lab
Building 601 - General Storage
Building 603 - Boiler Building
Building 711 - Ammunition/Explosives
Building 712 - Evaporator Building
Building 1237 - Storage Magazine*
Building 2301 - Well House No. 1*
Building 2308 - Pump House*
Building 2309 - Water Treatment Pump House
Building 8001 - High Explosive Magazine (contributing to historic district)
Building 8002 - High Explosive Magazine (contributing to historic district)
Building 8004-8004 - High Explosive Magazine (contributing to historic district)
Building HHM-1/#Area L* - Melt-Pour
(*In some instances the report's Table 5- "Current Use/Name" differs from that in the "Selected Property Assessments").

Couch
McGregor Naval Weapons Plant
Section 106 Review
10/3/96
p.2

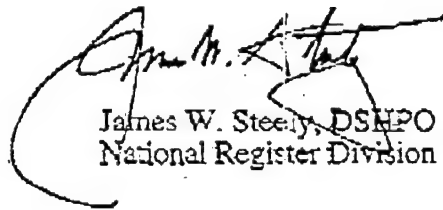
Since the proposed undertaking involves transferring the above listed historic resources to the City of McGregor, and will also involve the demolition of some of the historic resources, staff has determined that the proposed undertaking will have an adverse effect on the National Register eligible resources listed above. Therefore, staff proposes that the Navy draft a Memorandum of Agreement (MOA) that includes appropriate deed covenants providing for SHPO review of character altering exterior alterations to those eligible buildings being transferred. Texas Historical Commission also recommends the MOA include a stipulation that the Navy will complete and submit to our office for review (prior to demolition or transfer), Historic American Buildings Survey Level III documentation for each property type. Staff feels that Level III documentation is appropriate due to the completed historic context. We look forward to working with you and to reviewing a draft MOA. If you have questions regarding this aspect of the review, please contact Lisa Hart Stross in the Department of Architecture at 512/463-6167.

Thank you for your interest in the cultural heritage of Texas, and for your compliance with this federal review process.

Sincerely,



Stanley O. Graves, DSHPO
Division of Architecture



James W. Stealy, DSHPO
National Register Division

cc Jamie Wise, THC National Register Division
Foy DuBois, chair, McLennan-County Historical Commission

SG/LJH/JS/JW



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Curtis Tunnell • Executive Director

The State Agency for Historic Preservation

DEPARTMENT OF ARCHITECTURE

November 6, 1997

Don Couch, Code 064DC
Asst. Preservation Officer
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
PO Box 190010
Charleston, SC 29419-9010

Re: DOD, Final Mitigation Documentation, Closing, Naval Weapons Industrial Reserve Plant, McGregor, McLennan County, Texas


Dear Mr. Couch:

Thank you for the opportunity to review the project referenced above. The Department of Architecture reviews determinations of effect for federal projects on National Register eligible buildings, structures, objects, and districts.

Staff has reviewed the final Supplemental Documentation of National Register of Historic Places-Eligible Properties at Naval Weapons Industrial Reserve Plant, McGregor (NWIRP), Texas. Staff accepts the document as submitted. The Section 106 process is now complete for McGregor NWIRP. We look forward to working with you on a Programmatic Agreement.

Thank you for your interest in the cultural heritage of Texas, and for the opportunity to comment on this federally funded project in accordance with the National Historic Preservation Act, as amended. If you have any questions or concerns about this review please contact Lisa Hart Stross in the Department of Architecture at 512/463-6167.

Yours truly,


for Stan Graves, AIA, DSHPO
Director
Department of Architecture

SG/LHS

6.0 LIST OF PREPARERS

The Navy liaison associated with the preparation of this document is:

Mr. Laurens Pitts, Code 064 LP
Naval Facilities Engineering Command
Southern Division
2155 Eagle Drive
North Charleston, South Carolina 29418

The contractor responsible for preparing this document is:

Turner Collie & Braden Inc. (TC&B)
5757 Woodway
Houston, Texas 77057

The subcontractor responsible for the preparation of public coordination for this document is:

Community Awareness Services
Principal: Jerri Anderson
2909 Hillcroft, Suite 690
Houston, Texas 77057

The subcontractors responsible for the preparation of the historic resources studies and archeological resources studies for this document are:

Hardy Heck Moore & Associates, Inc. Principal Investigators: David Moore, Jr. & Anne I. Malanka 1414 W. 6 th Street Austin, Texas 78703	Prewitt and Associates, Inc. Principal Investigators: Kevin E. Stork & Ross C. Fields 7701 N. Lamar, Suite 104 Austin, Texas 78752-1012
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The following principal individuals contributed to the direct development of this Draft Environmental Impact Statement:

Name and Document Contribution

Associated Professional Expertise

Robert C. Esenwein, C.E.P.
Certified Environmental
Professional, National Association
of Environmental Professionals
#05787 (TC&B) Project Director

Principal, Environmental Planning: Seventeen
years of experience in preparing and managing
interdisciplinary environmental studies and
environmental assessments and impact
statements, and coordinating permitting activities.

**Name and Document
Contribution**

Associated Professional Expertise

Jimmy L. Koscielski, P.E.
Project Manager (TC&B)
Document Preparation and Review

Civil/Environmental Project Manager: Twenty-five years of experience in water resources, Section 404 Permitting, Phase I hazardous waste studies, and environmental planning and studies.

Rhonda Boyer (TC&B)
Project Coordinator
Socioeconomic Resources

Environmental Science/Management: Nine years of experience in environmental planning, hazardous waste studies, and analysis.

Dan Murphy (TC&B)
Biological Resources

Environmental Scientist: Twelve years of environmental planning, regulatory compliance, habitat assessment, wetlands and threatened and endangered species reviews and permitting.

Kelly Krenz (TC&B)
Physical Resources/Hazardous
Waste

Environmental Science/Management: Twelve years of experience in environmental planning, hazardous waste studies and analysis.

Robin Britton (TC&B)
Socioeconomic Resources

Environmental Scientist: Four years of experience in regulatory compliance regarding waters and wetlands under Section 404 of the Clean Water Act, and preliminary biological and cultural resource review.

Cinnamon Donovan (TC&B)
Physical Resources

Environmental Science/Management: Three years of experience in environmental studies, planning, and analysis.

Jennifer Walker (T&B)
Physical Resources

Graduate Engineer III: Four years experience in water resources and environmental planning.

Jerri Anderson (CAS)
Public Coordination

Principal: Twelve years experience in public involvement coordination.

7.0 BIBLIOGRAPHY

- Alliant Techsystems, Inc. 1995a. Plan for Termination of Use, NWIRP No. N95918, McGregor, Texas. Volume V-Detailed Plan to Vacate the Plant. August 1995. McGregor, Texas.
- Alliant Techsystems, Inc. 1995b. Telephone call confirmation memorandum regarding communication with B. Sandlin, Manager-Plant Engineering, regarding NWIRP facilities. December 13, 1995. McGregor, Texas.
- Alliant Techsystems, Inc. 1995c. Information obtained during NWIRP McGregor data collection meeting and site visit conducted during October 10-12, 1995 with B. Sandlin, Manager-Plant Engineering. McGregor, Texas.
- Alliant Techsystems, Inc. 1995d. Telephone call confirmation memorandum regarding communication with B. Sandlin, Manager-Plant Engineering, regarding NWIRP McGregor water supply system. November 16, 1995. McGregor, Texas.
- Alliant Techsystems, Inc. 1996a. Draft Final Work Plan for Environmental Baseline Study, Phase I at McGregor, Texas, dated January 12, 1996. Developed by Radian Corporation, Austin, Texas. McGregor, Texas.
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8.0 GLOSSARY

ACM	asbestos-containing material
BOD	biological oxygen demand
BHC	benzene hexachloride
BRAC	Base Closure and Realignment Commission
BTEX	benzene, toluene, ethylbenzene and xylene
Btu	British thermal units
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAS	Community Awareness Services
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFH	cubic feet per hour
cfm	cubic feet per minute
CFR	Code of Federal Regulations
cm	centimeters
cm ²	square centimeters
CO	carbon monoxide
CWA	Clean Water Act
CZM	Coastal Zone Management
dB	decibel
dB(A)	"A-weighting" decibel
dB(C)	"C-weighted" decibel
DOD	Department of Defense
DOT	Department of Transportation
EA	Environmental Assessment
E.O.	Executive Order
EBS	Environmental Baseline Survey
e.g.	<i>exempli gratia</i> , for example
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
et al	<i>et alia</i> , and others
et seq	<i>et sequentia</i> , and the following ones
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FM	Farm-to-Market
FOST	Finding of Suitability to Transfer
FWS	U.S. Fish and Wildlife Service
GO/CO	Government-Owned/Contractor-Operated

gpd	gallons per day
gpm	gallons per minute
ha	hectares
HAPs	Hazardous Air Pollutants
HM/HW	hazardous materials/hazardous waste
HSWA	Hazardous and Solid Waste Amendments of 1984
HUD	Department of Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
i.e.	<i>id est</i> , that is
ISD	Independent School District
IPSC	Interagency Perchlorate Steering Committee
kg	kilogram
km	kilometers
km ²	square kilometers
KV	kilovolt
KVA	kilovolt-ampere
KW	kilowatts
KWH	kilowatt hours
LBP	lead-based paint
LOS	Level-of-Service
LSG	Lone Star Gas
MBTU	million British Thermal Units
m	meters
m ³	cubic meters
MCF	million cubic feet
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
mgd	million gallons per day
mph	miles per hour
MSC	Medium Specific Concentration
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAVAIRSYSCOM	Naval Air Systems Command
NEPA	National Environmental Policy Act
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NRCS	Natural Resource Conservation Commission

NRHP	National Register of Historic Places
NWIRP	Naval Weapons Reserve Plant
O ₃	ozone
OPNAVINST 5090.1B	Department of the Navy's Environmental and Natural Resources Program Manual
OSHA	Occupational Safety and Health Act
PA	Programmatic Agreement
Pb	lead
PCB	polychlorinated biphenyl
pCi/l	picoCuries/liter
PM ₁₀	particulate that is less than 10 microns in aerodynamic diameter
PM _{2.5}	particulate that is less than 2.5 microns in aerodynamic diameter
POTW	Public-Owned Treatment Works
ppb	parts per billion
ppm	parts per million
PPP	Pollution Prevention Plan
psi	pounds per square inch
psig	pounds per square inch gauge
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
ROI	region of influence
ROW	right-of-way
SARA	Superfund Amendments and Reauthorization Act
SCS	Soil Conservation Service
SDWA	Safe Drinking Water Act
sf	square feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
sm	square meters
SO ₂	sulfur dioxide
SOUTHDIV	Southern Division (U.S. Navy)
SWMU	Solid Waste Management Units
TAC	Texas Administrative Code
TCB	trichlorobenzene
TC&B	Turner Collie & Braden Inc.
TDWR	Texas Department of Water Resources
TNRCC	Texas Natural Resource Conservation Commission

TPH	total petroleum hydrocarbons
TPY	tons per year
TSCA	Toxic Substance Control Act
TSD	Treatment, Storage, or Disposal
TU Electric	Texas Utility Electric Company
tsp	total suspended particulates
TSS	total suspended solids
TWC	Texas Water Commission
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
USAMC	U.S. Army Material Command
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USTs	underground storage tanks
VOCs	volatile organic compounds
µg/kg	micrograms per kilogram
µg/L	micrograms per liter

APPENDIX A - ENVIRONMENTAL BASELINE CONDITION FIGURES

Figure A-1	Environmental Baseline Conditions - Areas A & C
Figure A-2	Environmental Baseline Conditions - Area D
Figure A-3	Environmental Baseline Conditions - Area E
Figure A-4	Environmental Baseline Conditions - Area F
Figure A-5	Environmental Baseline Conditions - Area G
Figure A-6	Environmental Baseline Conditions - Area H
Figure A-7	Environmental Baseline Conditions - Area L
Figure A-8	Environmental Baseline Conditions - Area M
Figure A-9	Environmental Baseline Conditions - Area P
Figure A-10	Environmental Baseline Conditions - Area R
Figure A-11	Environmental Baseline Conditions - Area S
Figure A-12	Environmental Baseline Conditions - Area T

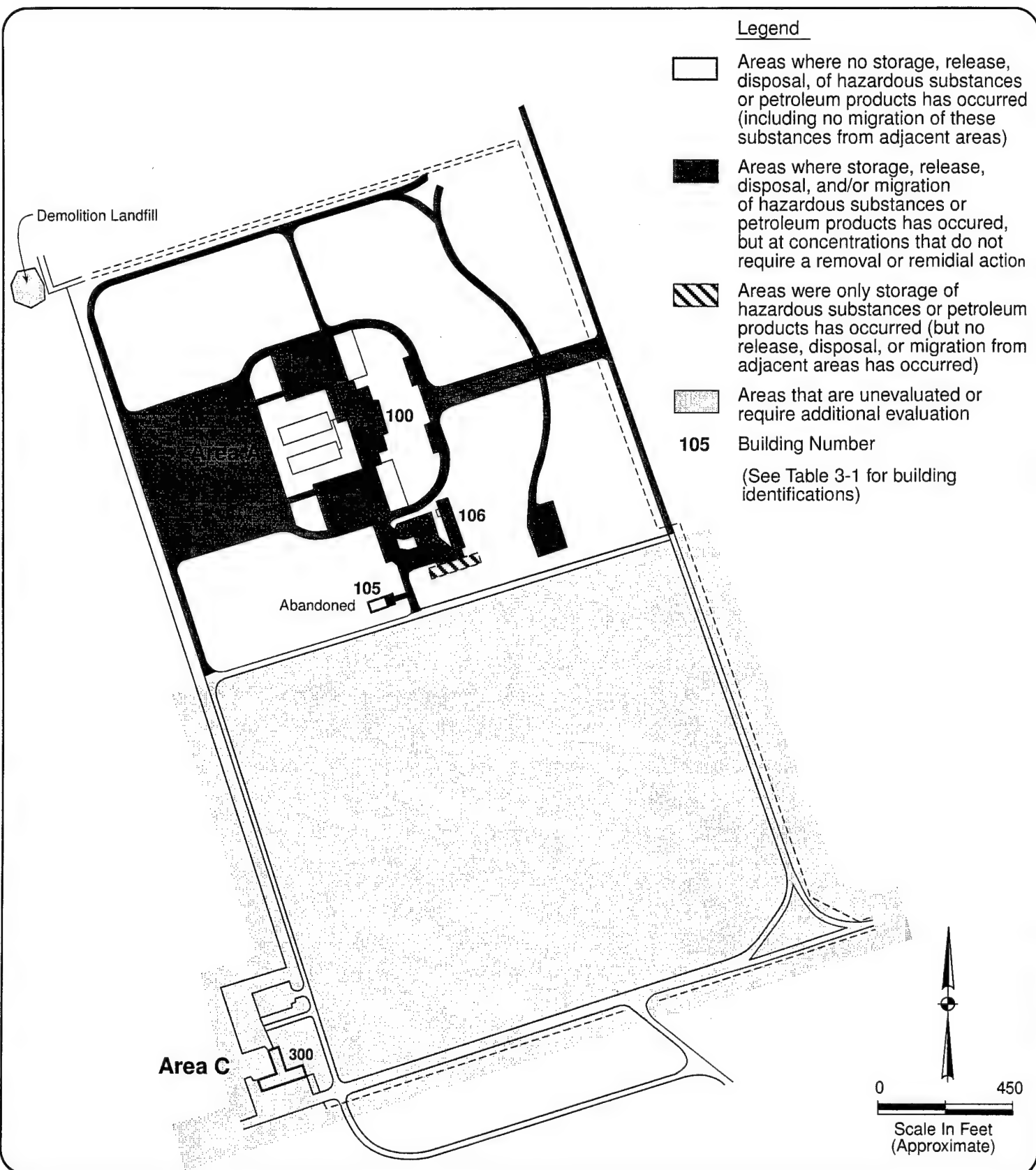
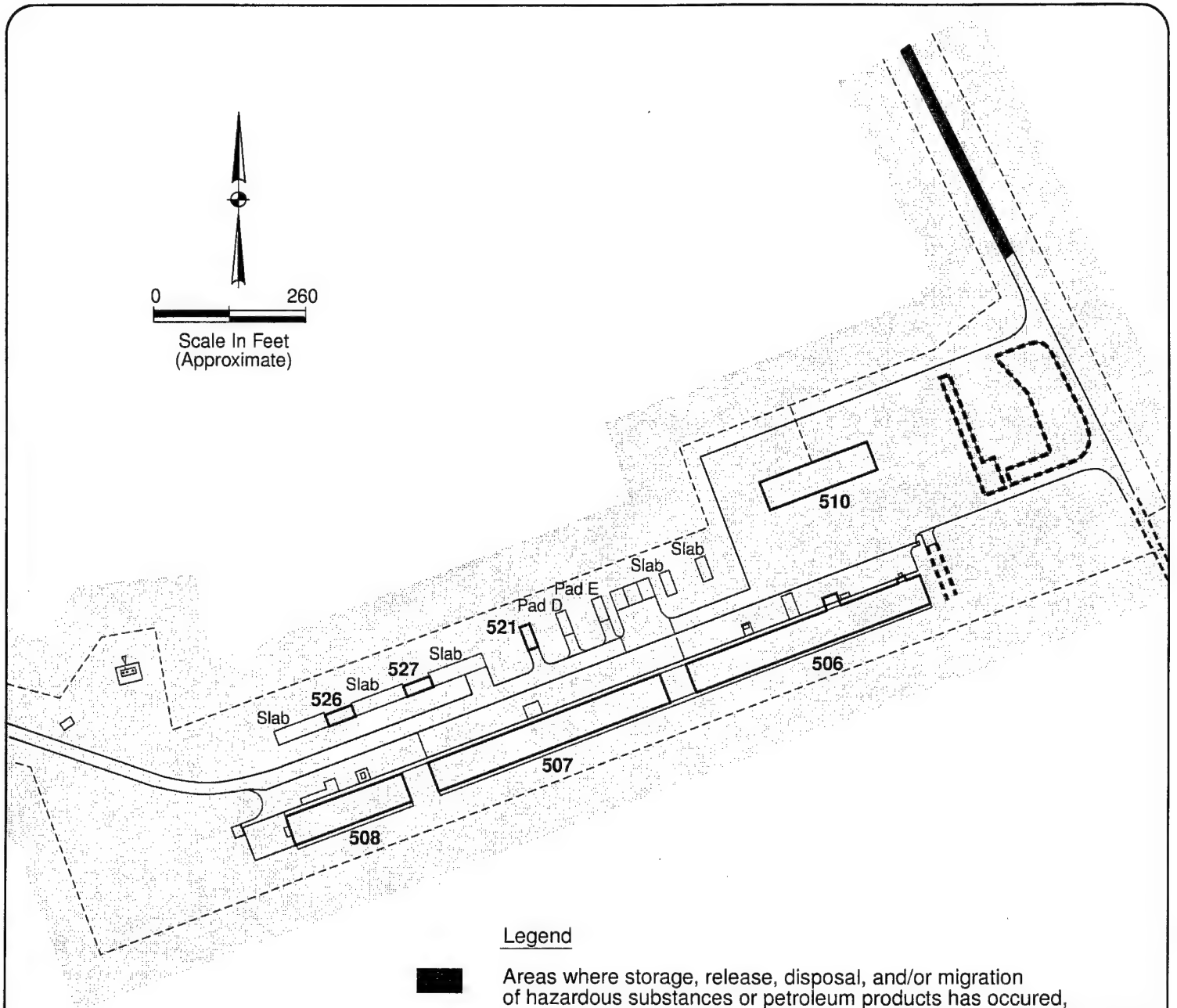
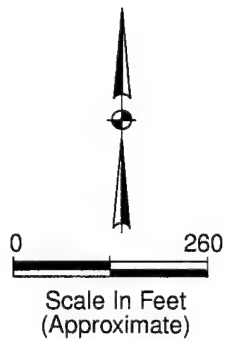





Figure A-1. Environmental Baseline Conditions - Areas A & C (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.



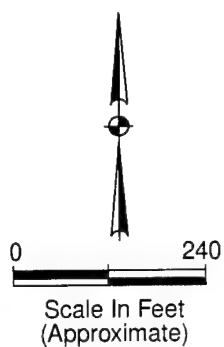
Legend





-  Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action
-  Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken
-  Areas that are unevaluated or require additional evaluation
- 507** Building Number

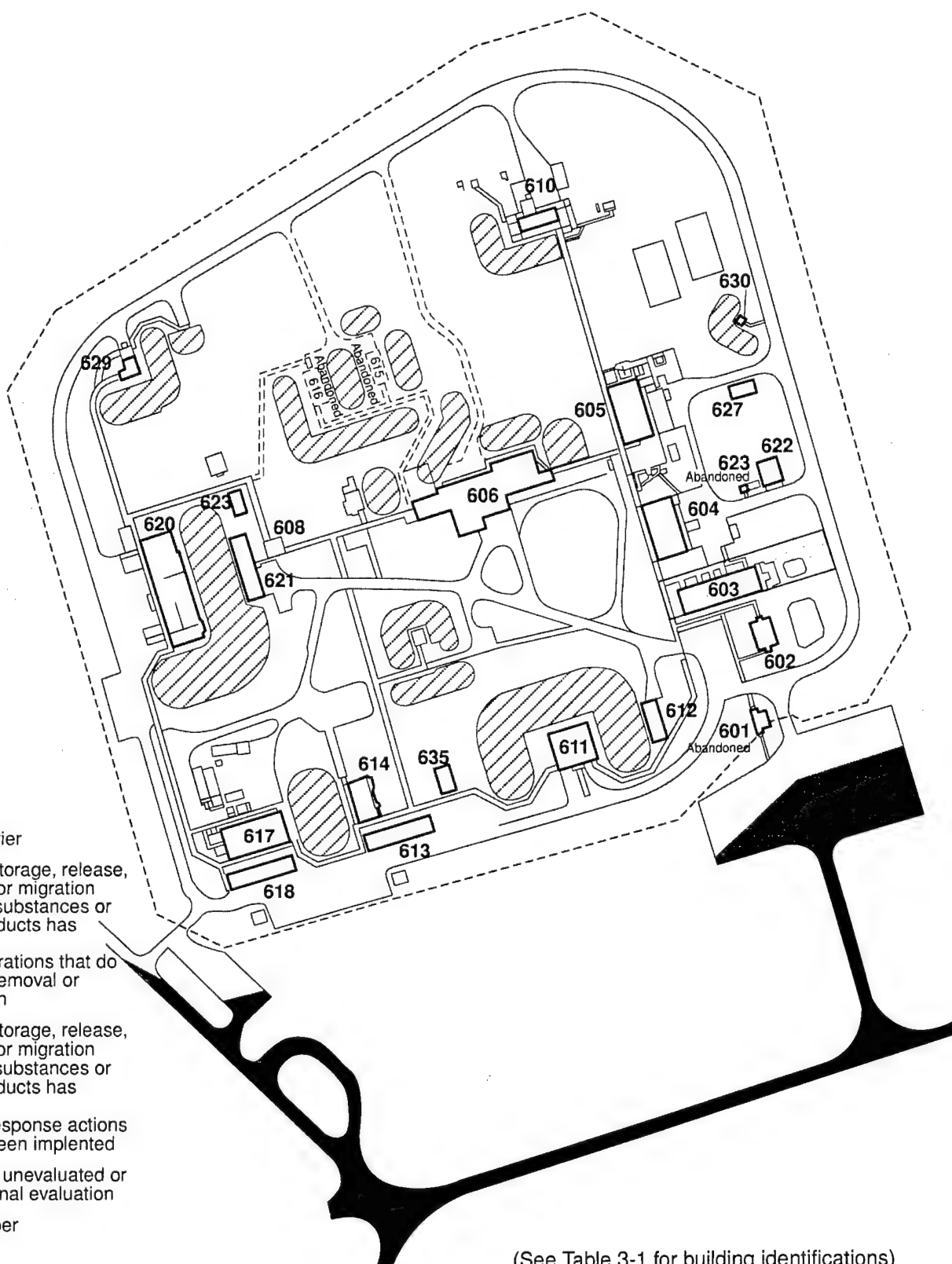
(See Table 3-1 for building identifications)

Figure A-3. Environmental Baseline Conditions - Area E (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.



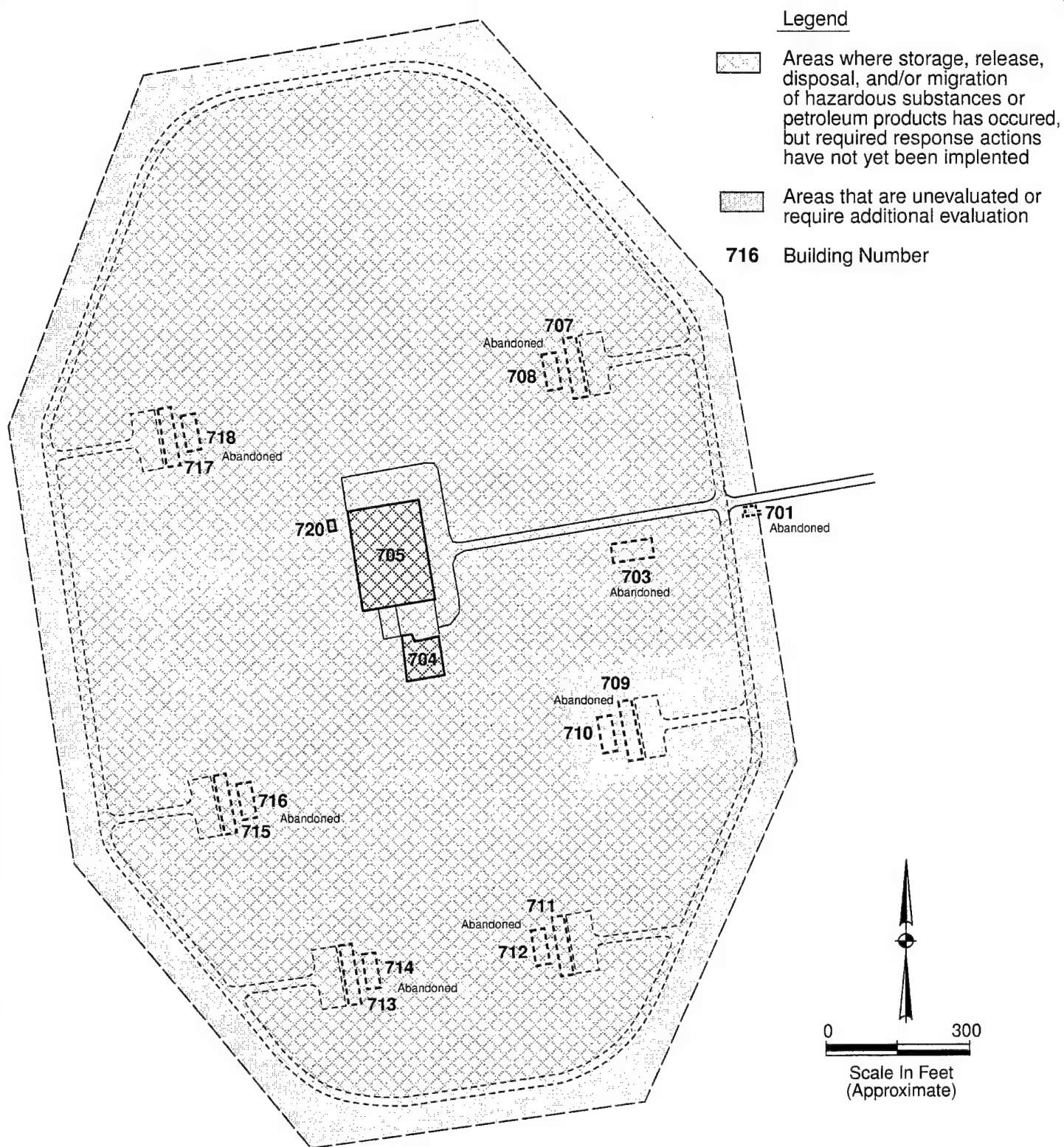
- Legend**
-  Explosive Barrier
 -  Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action
 -  Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but required response actions have not yet been implemented
 -  Areas that are unevaluated or require additional evaluation
 - 621** Building Number



(See Table 3-1 for building identifications)

Figure A-4. Environmental Baseline Conditions - Area F (U.S. Navy, 1996c)

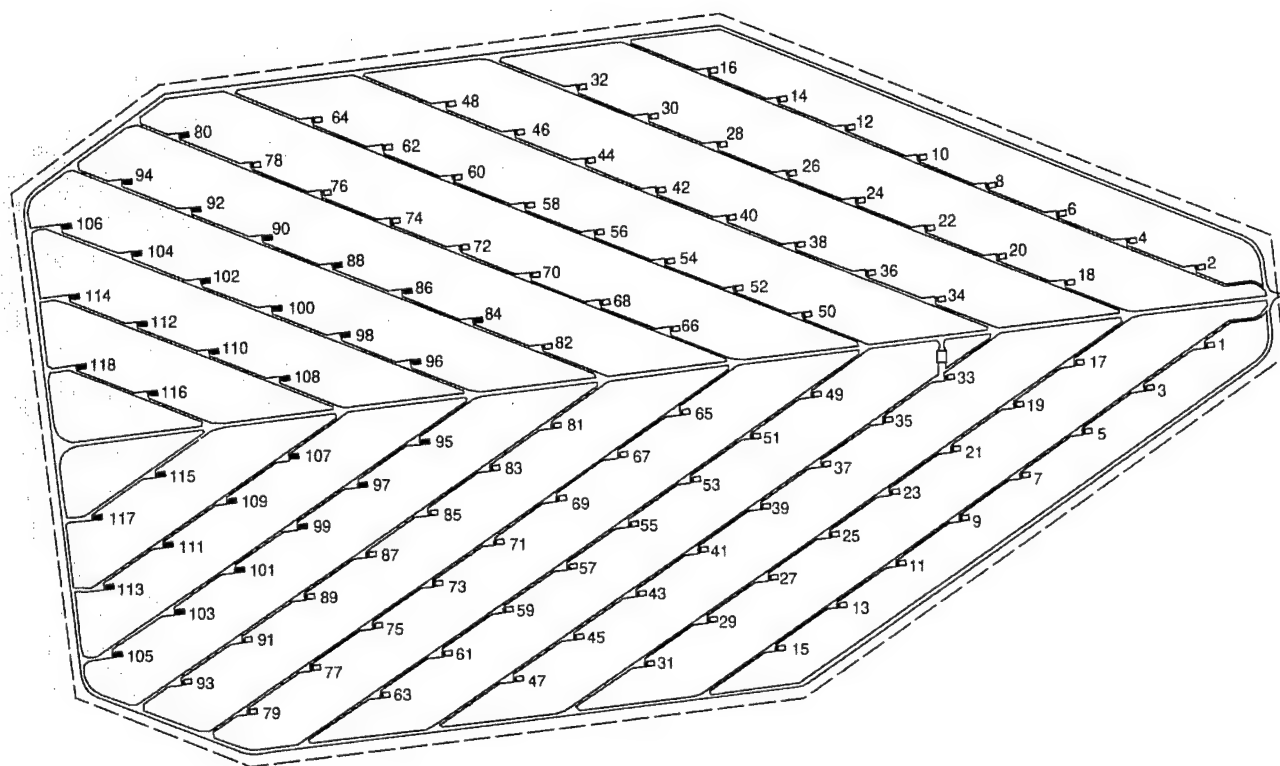
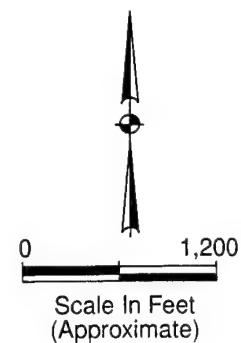
Note: Multiply by 0.3048 to convert feet to meters.



(See Table 3-1 for building identifications)

Figure A-5. Environmental Baseline Conditions - Area G (Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.

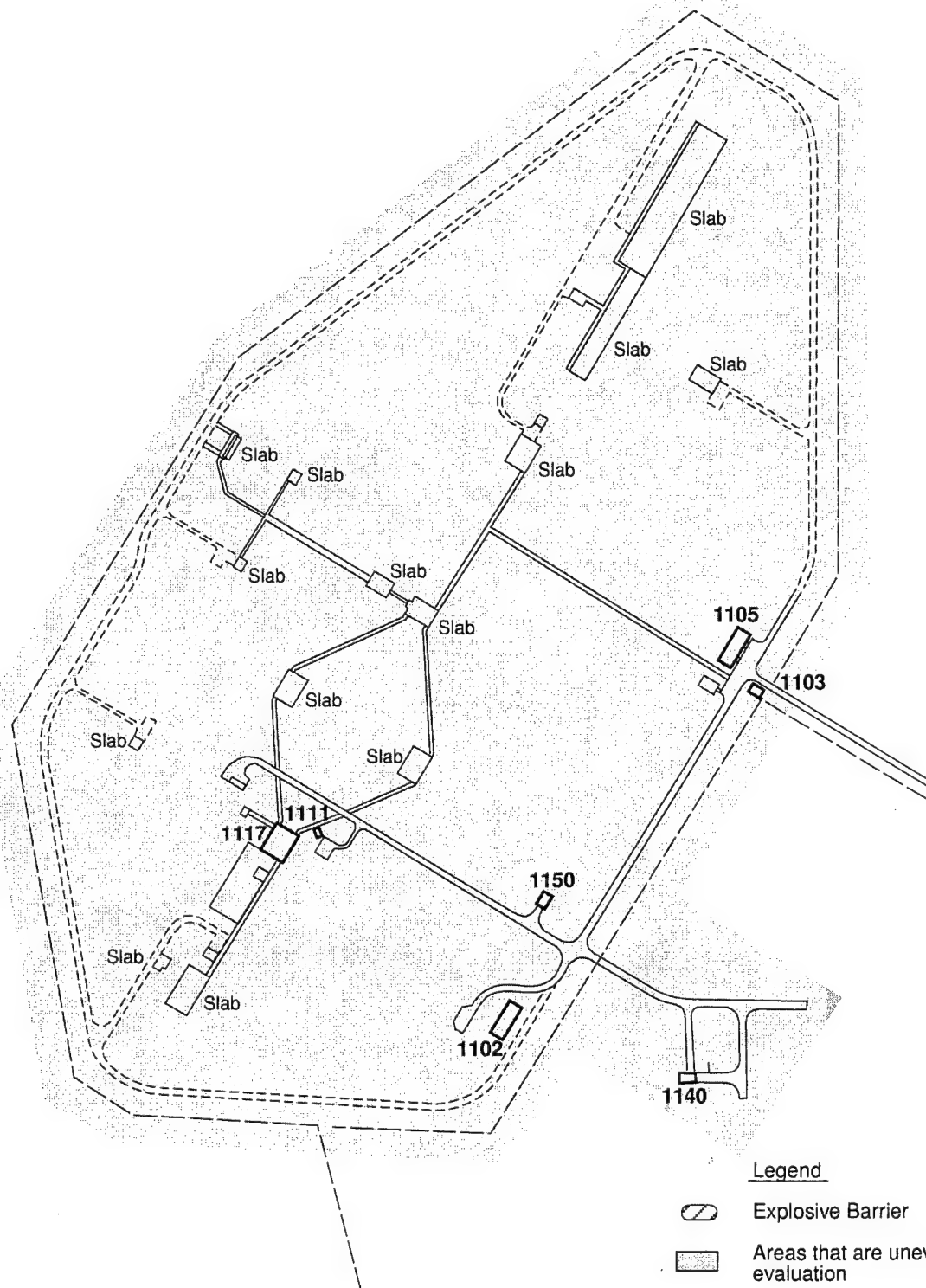


Legend

- Damaged Structure
- Areas that are unevaluated or require additional evaluation
- 57** Building Number
(See Table 3-1 for building identifications)

Figure A-6. Environmental Baseline Conditions - Area H (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.



Legend



-  Explosive Barrier
-  Areas that are unevaluated or require additional evaluation
- 1224** Building Number
(See Table 3-1 for building identifications)

Figure A-7. Environmental Baseline Conditions - Area L (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.

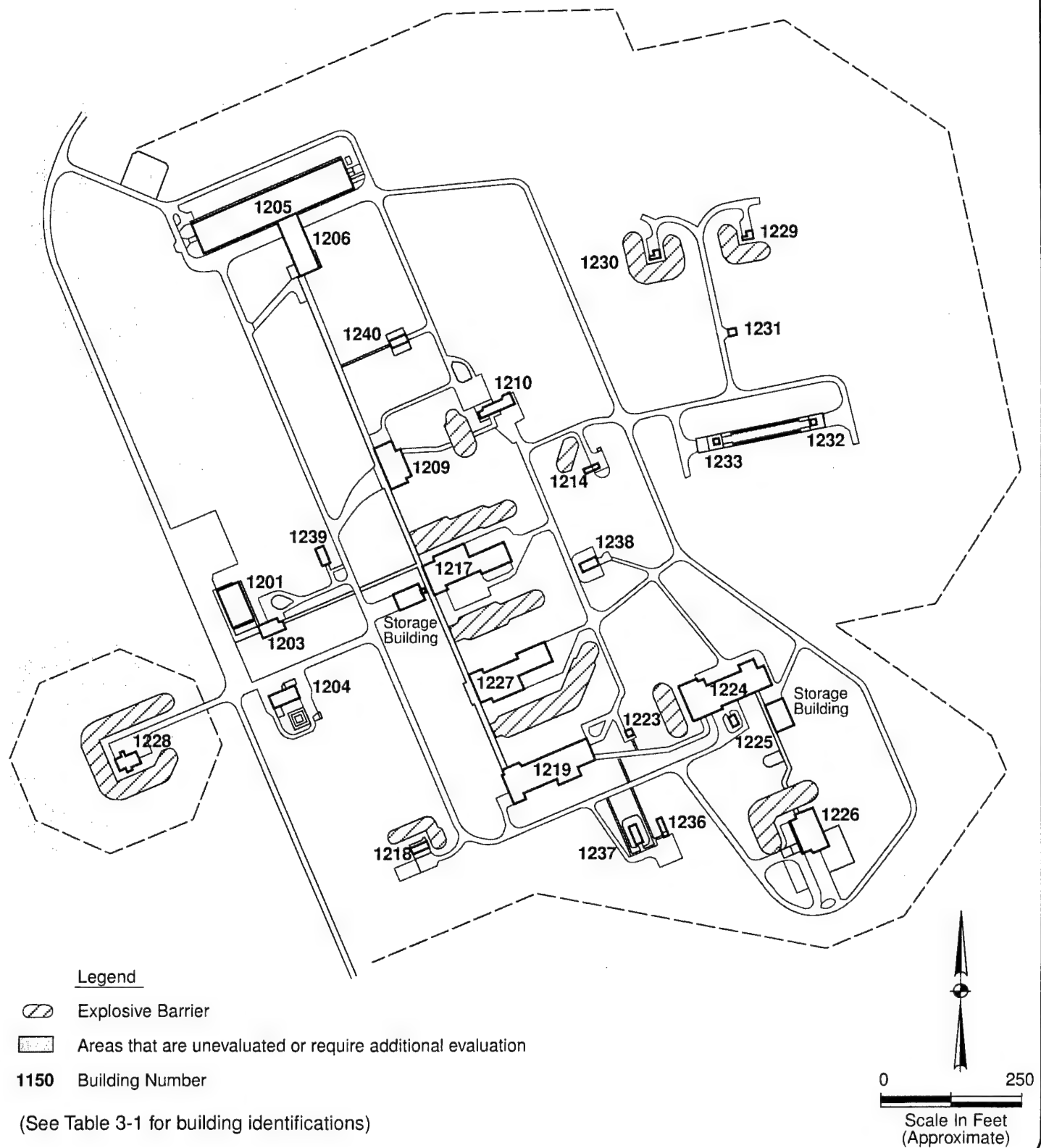
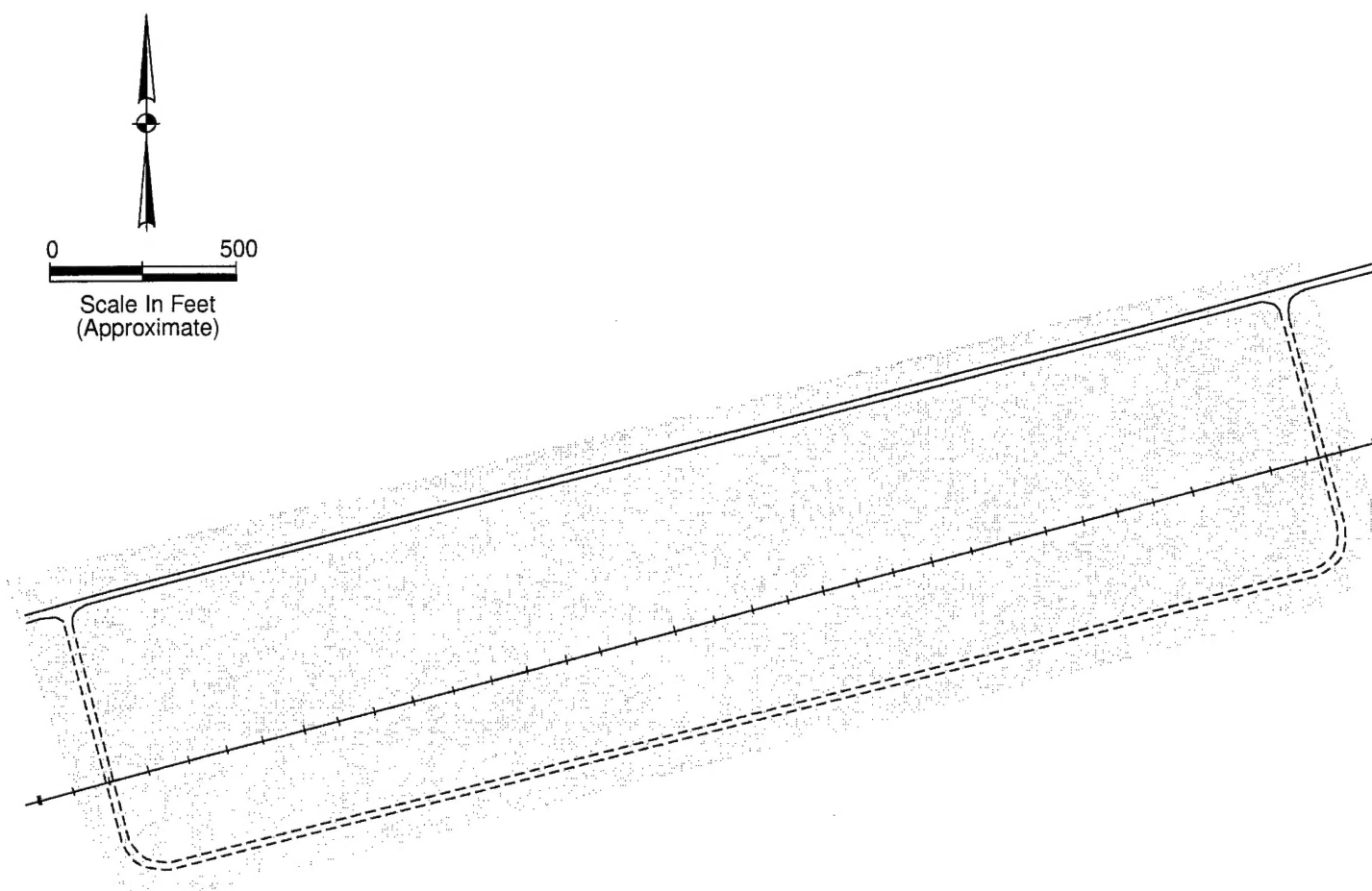


Figure A-8. Environmental Baseline Conditions - Area M (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.



Legend



Areas that are unevaluated or require additional evaluation

Figure A-9. Environmental Baseline Conditions - Area P (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.

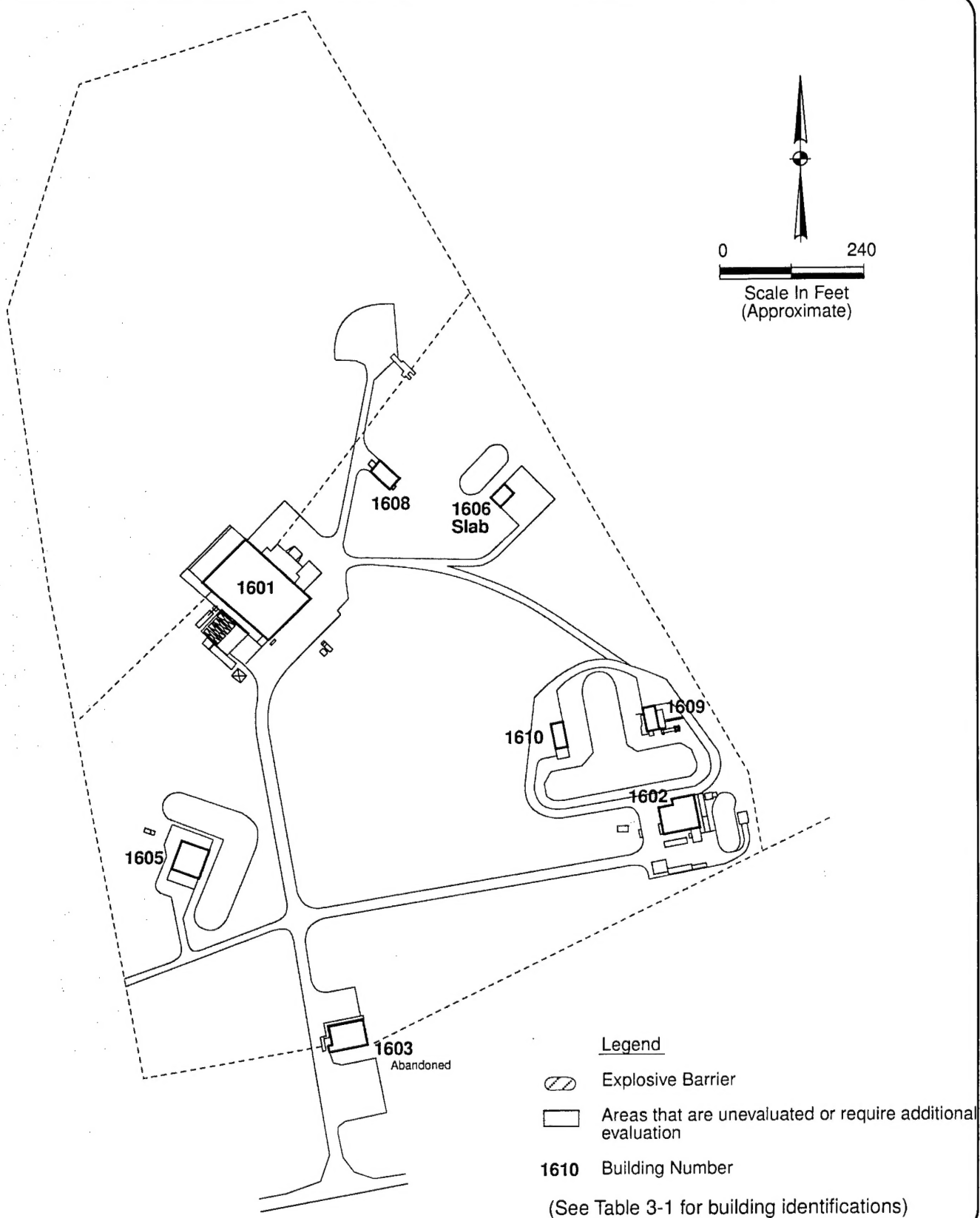


Figure A-10. Environmental Baseline Conditions - Area R (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.

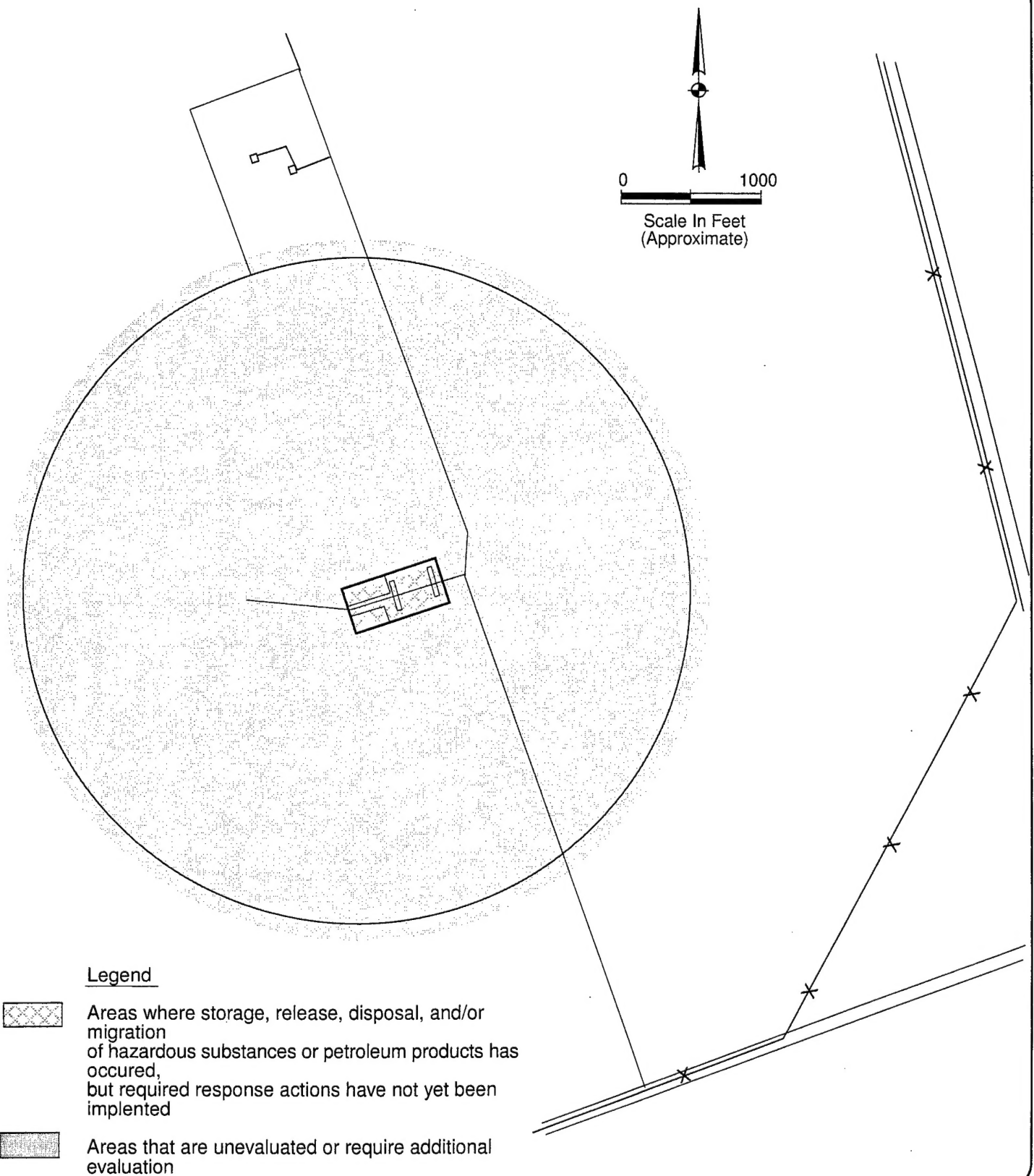


Figure A-11. Environmental Baseline Conditions - Area S (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.

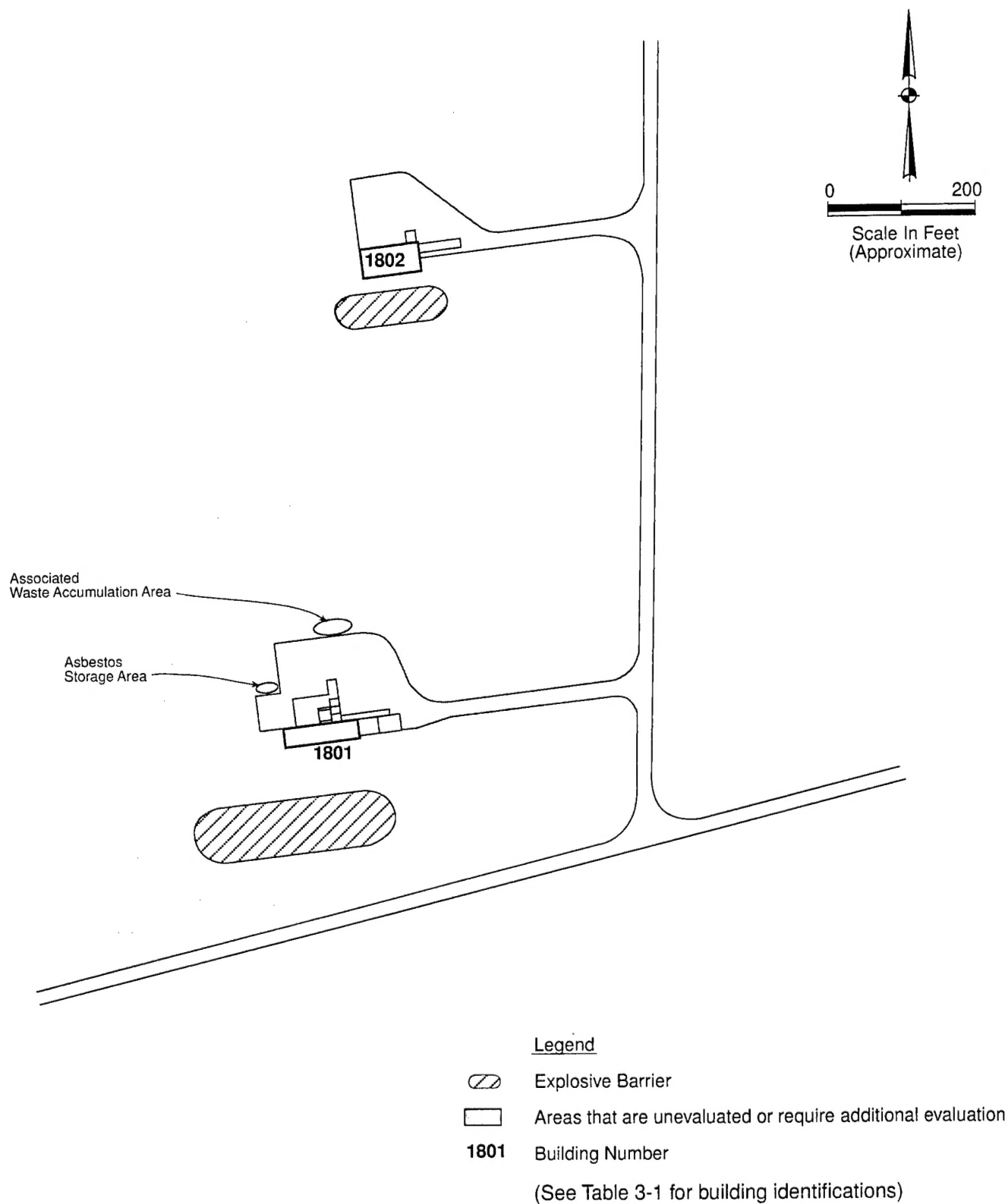


Figure A-12. Environmental Baseline Conditions - Area T (U.S. Navy, 1996c)

Note: Multiply by 0.3048 to convert feet to meters.